The Builder.

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A Domed Church (Royal Academy Gold Medal Design):—
Perspective View }
Plan and Section } .....By Mr. Lionel U. Grace.

Design for a Domed Church .....By Mr. E. Vincent Harris, A.R.I.B.A.

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Right of Light in Paris.

IS the question of the reasonableness of the present English law as to right of light is occupying a good deal of public attention just now, it may be of some interest to describe how these matters are adjusted in Paris. The opinion has been expressed in a good many quarters that the English law as to right of light gives to the possessor of any small window of twenty years' standing a most unreasonable power of either stopping his neighbour's building or exacting from him, in lieu of prohibition, a pecuniary compensation often out of all proportion to the injury really sustained by the owner of the dominant tenement.

Those who consider that the present law of light in England is unreasonable and should be seriously modified, may find their opinion confirmed by the fact that no such tyrannical form of legislation exists in the capital of our nearest neighbouring nation. Complicated questions appear often to arise between owners of neighbouring properties in Paris, but they are not questions of common law, but only of the force and interpretation of private agreements made between the adjoining owners or their predecessors. In Paris there is no law regarding the right of light, neither has any house owner or tenant any prescriptive right to light other than that specified in article 675 of the French Civil Code, unless by reason of some private agreement come to by adjoining property holders, specifying that certain space or spaces of ground between two properties shall, for reasons of light and air or mutual convenience, for all time be considered in the light of a "servitude"—viz., shall remain free of any construction or shall not be built around for a determined distance above a certain height, so as to maintain the agreement come to between the original property owners for mutual advantages of light, air, or other convenience. Such "servitudes" are, however, entirely private agreements, and hold good as long as the conditions do not contravene the rules and regulations of property and buildings, etc., and ground possessing such "servitudes" is sold or passed over to any future possessor with full cognisance that the "servitudes" exist; and the new owner is obliged, in case of construction, reconstruction, or additions, to keep to the terms of such servitudes, unless by coming to terms with the adjoining property owner—terms of interest or of mutual convenience—he obtains a right to modify the conditions. But such agreement is entirely private, and does not in any way form any general prescriptive right; any dispute between the adjoining owners on the subject of such "servitudes" is a private one; and no other right than that agreed on mutually by themselves, or by the preceding owners whose agreement they have themselves accepted, can be brought to bear on the matter.

This arises no doubt partly from the fact that all building ground in Paris is freehold, and the building owner is always in principle the ground owner; each one has, therefore, the right to do as he likes on his own ground without any regard for his neighbour, as long as he is in accordance with the laws and the various rules and regulations of buildings in regard to sanitation, etc. He may come to any lawful agreement he likes with the adjoining land owner to build in a manner likely to be of mutual convenience to each as regards air, light, space, etc., or each may build in the manner he may prefer without paying attention to his neighbour's convenience; neither need any new building raised against an existing building necessarily meet the convenience of the neighbouring property as regards light and air, unless, of course, the "servitudes" spoken of above exist. It is a regulation, however, that if, for mutual convenience, and to profit by the minimum dimensions granted for the area of adjoining courtyards, adjoining property owners agree to construct their courtyards one next to the adjoining one—or if in the case of a new house built against an existing house it is agreed that the new courtyard shall be built so as to continue the open side of the existing courtyard—then the house owners must promise that such arrangement shall be maintained.

The only law, therefore, which gives a natural prescriptive right to an opening (which in any case can only be one useful for light or air and not for purposes of view) is that of article 675 of the Civil Code, enjoining that in a party wall—a division wall built by mutual consent half on either side of the line dividing the two properties—an opening which has existed for thirty years becomes prescriptive, and the adjoining building owner must so build his house as to form a courtyard of proper dimensions around this opening; but there is no other restriction regarding

the height of the walls of this courtyard than the usual building rules regulating the height of buildings on courtyard sides. If, however, such opening exists in a boundary wall contiguous to the dividing line of the two properties—viz., raised entirely on its own ground on one side of the dividing line but touching this line—then such opening can never become prescriptive.

Tenants of the whole house or portions of the house or premises have no claim on the adjoining owner for detriment to light or air, for on letting they are supposed to be aware of the adjoining owner's natural rights, and their only claim is in cases where they have been made to understand in error that their light could not be interfered with, and in this case they have only one course open—viz., a claim on their landlord for a decrease of rent or cancel of lease. A case in point may be mentioned, that of a tenant who had for some time rented a flat the back windows of which obtained their light from a regulation courtyard open on one side towards the vacant neighbouring property. The property owner having recently built on his ground, and for some reason not having—as is usually the case for mutual convenience—built his own courtyard opposite the courtyard of the adjoining property, the result is that the rooms taking light from the existing courtyard have suffered much prejudice as regards light and air; but the tenants have no right to complain, for the courtyard on which their windows are lighted is constructed in accordance with the regulation dimensions; they could claim for a decrease in rent, but have no recourse against the adjoining owner.

THE SANDING-UP OF TIDAL HARBOURS.

THIS was the subject of a paper read on Tuesday last before the Institution of Civil Engineers by Mr. A. E. Carey, M.Inst.C.E. The importance of preserving harbours, upon the construction or improvement of which many thousands of pounds have been spent, must be sufficiently obvious to all maritime nations, and the communication to which we now refer consequently deserves attention, although it does not add materially to our knowledge on the subject. Its object is to indicate the effects of sanding-up in harbours (1) where no river debouches, and (2) at the mouths of rivers and estuaries. Probably no department of engineering work presents more difficult problems than those encountered by the marine engineer, and the possibility always remains that the value of his labours may be seriously diminished, if not entirely destroyed, by natural causes. An instance of such action may be found in the harbour of St. Ana Curaçao, cited by Mr. Carey, the entrance to which was permanently narrowed by a hurricane in the year 1877. Ports have often been established in places, as at Rye, Winchelsea, Sandwich, and elsewhere, from which the sea has receded for miles; and at other places, as at Liverpool and Preston, where navigable channels can only be maintained by extensive and costly dredging operations. In the case of other ports, of which we may cite London as an example, there are evidenced gradual changes seriously threatening the prospects of future navigation, and so extensive as to seem almost beyond human control.

In the earlier portion of his paper, Mr. Carey makes reference to the measures adopted in various countries for the preservation of harbours. He describes the steps taken to dredge and maintain the channels to the port of Ostend, where it appears that of three channels one is now definitely abandoned, and the other two can only be kept clear by the annual removal of some 950,000 cubic metres of sand. Similarly the port of Boulogne requires the annual dredging of 535,000 cubic metres of material. The author considers that dredging is the only satisfactory expedient for conserving working depths at the mouths of sand-threatened harbours. In this expression of opinion we find a candid admission of human inability to cope successfully against the great forces of Nature. Dredging, it must be admitted, is no real cure for lack of depth, and Mr. Carey is quite right in terming it an "expedient." In some cases the dredging of a channel across a river bar is of much benefit, so that by the adoption of a suitable section encouraging scour and deepening, and by the construction of jetties or spurs from the banks restricting the sectional area sufficiently to balance the increased velocity, the channel may be permanently maintained. In other cases the tidal forces are so powerful and are exercised over such extensive areas as to defy control. It is always important, however, to study the influences at work outside the entrances to harbours, and at the mouths, or in the estuaries, of rivers, if dredging operations and others measures are to be even moderately successful. This point is clearly recognised in the present paper. Stress is laid on the character and coarseness of sand as an important factor in its travel, and the method of travel along a sea bottom is described. By means of diagrams the author demonstrates the action of the flood and ebb travel on coast lines having standard contours and various arrangements of breakwaters and piers, showing in each case the position of the resultant shoaling; and, by a further series of diagrams, he indicates the contingent effect of a prevailing wind.

As an actual example of the extinction of a harbour by sand the author cites the obliteration of Ceará Harbour, in Brazil, a work which occupied ten years in construction at a cost of more than 400,000*l*. An instance might also have been found nearer home in the former harbour of Pagham, in Sussex, still indicated on most maps. This haven is completely sanded up, and the visitor will now find the site occupied by fields. Mr. Carey next refers to the harbour of Madras, detailing the original studies of the late Mr. Parkes, and stating the changes in the contour of the coast which resulted from the work of the first two years. Attention is directed to the fact that a progressive shoaling of the entire area up to the original seven-and-a-half fathom line has followed. The condition of things was exhaustively considered in a report to the Indian Government by the late Sir Andrew Clarke in 1879, and two commissions have since inquired into the state of the harbour. From these investigations it appeared that unless the opening of the harbour as originally designed were closed, and a new opening to the north-east substituted, the harbour would prove valueless as a shelter for shipping.

The author then takes up the question of harbour construction on the west coast of Denmark, where the only harbour is that of Esbjerg, and with this exception even fishing boats have no means of shelter beyond that afforded by the mouth of the Limfjord.

It appears that a large Government harbour was commenced in 1879 at Hirtshals, the estimated cost being 550,000*l*., but the work is now sanded-up and abandoned. After describing some harbour works advocated by him on the coast of Denmark, the author states the conclusion that, in view of the precarious nature of tidal harbour work, and the instances in which success has been only partial, a departure from established practice is desirable. Considering harbours of refuge to have a limited range of utility, except in land-locked positions, he believes that in many cases it would be practicable by means of piled structures to create shipping facilities meeting reasonable requirements. Such structures would certainly be inexpensive, and might easily be provided by municipalities and other local authorities in favourable situations, but they would scarcely fulfil general requirements, however carefully designed, and in rough weather they would be of practically no use. This suggestion is a somewhat unsatisfactory conclusion to a paper, which, although containing much interesting matter, brings us no nearer to the solution of the problem foreshadowed by the title. The sanding-up of harbours and navigable rivers still continues, and we hope further attention will be devoted to the question by members of the Institution of Civil Engineers.

NOTES.

Waterloo Bridge.

THE London County Council have now, we see, completed their act of barbarity on Waterloo Bridge by removing what were still left of the old finely-designed lamp standards, and the bridge is now vulgarised throughout by the substitution of the weak and commonplace lamp standards which are, we suppose, designs by the County Council officials, but which look as if they had been bought out of a foundry pattern-shop. That the old lamp standards were specially designed to suit the character of the bridge, and that they were admirable examples of cast-iron design, is no doubt a matter beyond the comprehension of the County Council. This is one of the worst and most inexcusable pieces of vandalism that has been committed in London in modern times; a grand monumental bridge has been completely spoiled and defaced; and we do not think that those who are responsible for this piece of stupidity have heard the last of it.

Church School Buildings in London.

THE BISHOP OF LONDON has issued an appeal for the purpose of raising a fund from which to put the voluntary or church schools into a proper state of repair before they are handed over to the County Council, and to repay advances made by the present managers for work done to the fabric of these schools for which they are in debt. This appeal is a naïve confession that the church schools in London are not at this moment in a proper state of repair, a thing which is not creditable to the Government inspectors of Schools, who are supposed both to examine the scholars and to report on the state of the buildings; though, as we have often pointed out, this latter duty should be the work of trained and competent surveyors, not of amateurs. But this appeal clearly suggests that the County Council should have a very careful survey made of all the voluntary schools before they are taken over. Fortunately the London County Council is in a better position in this respect than the rural councils, since they have plenty of competent officials who can survey these buildings. In the country the task is not so easy, and we fear that several of the county councils have not been very businesslike in this respect, and have taken over a number of "non-provided" schools which required considerable work upon the buildings to make them efficient.

Fire Precautions in Theatres.

THE suggestion contained in the Report of the Theatres and Music Halls Committee of the London County Council that all such places of amusement should compulsorily be placed in telephonic communication with the Fire Brigade is an essentially reasonable one; and it is a matter for surprise, after the serious disasters that from time to time have been experienced in such buildings in various parts of the world, to find that in London only five theatres and four music halls are at present so connected. A more serious state of things, however, appears to exist in the case of Drury Lane Theatre. This is a theatre carried on under letters patent, and by virtue of section 4, 25 Geo. II., c. 36 (1751), these patent theatres were exempted from the provisions of the Act regulating theatres. According to the Report, this exemption still exists, and the County Council have only jurisdiction over such minor matters as exits and fastening doors, etc. If this be the case, reform is urgently needed and legislation called for, especially having regard to the character of the entertainments associated with this house, viz., pantomimes, where the audience consists largely of children.

Legal Effects of Notices to Abate Nuisances.

A POINT of considerable importance to owners of property has again been before the courts, in the case of Oliver *v.* Camberwell Borough Council, as to the effect of notices to abate nuisances under the Public Health (London) Act, 1891. Section 3 provides that, upon receipt of information as to the existence of a nuisance, the sanitary authority shall give such instructions to their officers as shall secure the existence of the nuisance being brought immediately to the notice of any person who may be required to abate it, and the officer shall do so by serving a written intimation. Section 4 then provides for the sanitary authority serving a notice for the abatement of the nuisance "on the person by whose act, default, or sufferance the nuisance arises or continues" or on the owner of the premises. As in section 4 there is no suggestion of time being given to the person served with the "intimation" mentioned in section 3 to abate the nuisance before steps are taken under section 4, those served with such notices have sometimes failed to distinguish between the "intimation" given by the officer under section 3 and the notice of abatement given by the sanitary authority under section 4, but the facts of this case illustrate the importance of so doing. The owners, having been served under section 3 with an intimation that a drain was defective and caused a nuisance, proceeded to carry out the work. It, however, subsequently appeared that the drain was a "sewer" for which the sanitary authority itself was liable, but the owner was defeated in his attempt to recover the expenses he had incurred from the sanitary authority on the legal ground that the intimation contained in the notice under section 3 did not place him under legal compulsion to do the work, as the notice under section 4 would have done, and, consequently, having voluntarily incurred the expenditure, he was held unable to recover.

The Heat Treatment of Steel.

MUCH valuable information is to be found in the sixth Report to the Alloys Research Committee of the Institution of Mechanical Engineers. Since the issue of the previous report the value of the work to which the Institution has accorded so liberal a support has been widely recognised, and we learn with regret that the committee is about to be dissolved, more particularly because there is much more work to be done in this department of research. The present report was undertaken for the committee by the late Sir William Roberts-Austen, who had been engaged for several years upon the inquiry, although ill-health and pressing official duties had long before his death prevented him from devoting so much time to the work as he desired. The necessary experimental work was entrusted to Mr. Merrett, of the Royal School of Mines, by whom it was carried to completion in accordance with the lines laid down by Sir William Roberts-Austen. Unfortunately no notes relative to the experimental work were found among Sir William's papers, and only a few pages of the report were actually written by him. The task of completing this important document was undertaken by Professor Gowland, also a member of the committee, assisted by Mr. Harbord, of the Royal Indian Engineering College, and other gentlemen. While we must admit that the report is admirably presented, it is in many respects inconclusive, and we feel sure that engineers throughout the world would feel doubly grateful to the Institution of Mechanical Engineers if that body could see its way clear to continue the great work conducted in the past.

Spherical and Framed Domes.

IN a paper recently read before the American Society of Civil Engineers the author presents some original matter upon a subject of much interest to our readers. Early architects possessed considerable knowledge of domed structures, but only in a general way, as may be inferred by examination of the reinforcement applied from time to time to some such buildings, but the actual point of weakness does not appear to have been known positively. Correct principles were formulated many years ago, but some engineers still design domes by the aid of incorrect methods. While the paper to which we refer does not cover the subject completely, it sets out the relations between the principal stresses in domes and their magnitude, and demonstrates a simple and rational method of construction which should be sufficient to enable any designer to deal with problems arising in ordinary practice. Some practical notes on the construction of masonry and metal domes contain a series of very useful suggestions.

"The Making of Architects."

THE paper under this title read by Mr. Maurice B. Adams at the Architectural Association, and printed in the present issue, is one of the most comprehensive and judicious summaries we have seen of what is required in the education and practice of the modern architect. We recommend to young architects especially his remarks on the necessary place which drawing must now take in the working out of building design. Mr. Adams has not exaggerated drawing at all; he fully recognises that fine drawing is not necessarily fine architecture, but it is the method of getting a fine architectural idea into shape, and it is an absolutely necessary preliminary in days when the planning of complicated buildings has become such an important practical problem. Men who are beginning their career will be wise not to listen to those who tell them that drawing is all nonsense, and that they will be better architects by working with their own hands on a building. Our own experience is that the men who produce the best architecture also, as a rule, draw the best; and when we get a bad drawing sent to us it usually represents a bad design.

A Society of British Sculptors.

WE see it announced that a "Society of British Sculptors" has been formed, of which Mr. Brock is President. The feeling which led to the formation of the Society was that, as Mr. Brock remarked at the meeting held at the Institute in Piccadilly to constitute the Society, the art of sculpture had suffered in this country from being inadequately represented; which is unfortunately too true, having regard to the poor accommodation given to sculpture at the Royal Academy, and the way in which everything is sacrificed to painting. Had things been otherwise, we should have thought the institution of a special Society unnecessary; but as long as the Royal Academy remains practically an academy of painting, such a movement on the part of sculptors is not surprising, and can

only be regarded with sympathy. The most difficult task of the Society will be to get the general public to take an interest in the subject, sculpture being in this country the least popular and the least understood of all the arts.

Royal Academy Lectures.

PROFESSOR CLAUSEN'S fourth Royal Academy lecture was delivered on Thursday afternoon last week. The subject was "Titian, Velasquez, and Rembrandt." Professor Clausen spoke of these painters as perhaps the greatest that the world has yet produced. Above praise, it seemed an impertinence to discuss their merits, and he therefore drew a comparison between their respective methods and some of the qualities distinguishing their work. Dissimilar as were their methods, the fraternity of greatness allowed their works to hang side by side in perfect harmony. In Titian was found the meeting-point of the old and the new. Greatest perhaps as a portrait painter, and marvellous as was the detail shown in some of his portraits, the lesson they taught was the effect that is attained by leaving out unessentials. His colours were few, and he did with them all that it was possible to do in colour. The largeness of effect produced by his pictures was due rather to the colour than the form. The interest of light and shadow was carried into every part of his picture, a striking difference to the concentration of effect aimed at by many masters. Passing on to Velasquez and Rembrandt, the lecturer pointed out Titian's great influence on their work. Velasquez's portraits were peculiar in that they showed no trace of his own personality. He was a dispassionate and remorsely acute observer, who painted with extraordinary truth and accuracy. Rembrandt, on the other hand, showed a greatness of sympathy—a poetic and sometimes dramatic effect realised by neither Titian or Velasquez. His drawings and etchings were equally characteristic, and he was without doubt the greatest of etchers. Professor Clausen summed up a most interesting lecture with: "Titian saw the noble aspect of things; Velasquez presented them with absolute truth; and Rembrandt regarded them with the eyes of a poet."

Royal Academy Lectures—continued.

PROFESSOR CLAUSEN'S fifth lecture, at which there was an exceptionally large attendance, dealt with open-air painting and landscape. Landscape painting for its own sake was a comparatively late development, though the bits of landscape introduced by early painters as backgrounds were often of great beauty and interest. Titian was the first real constructor of landscape, though in his case, too, always subordinate to figures. Pure landscape began with Claude and Poussin; Claude's titles and figures ("The Queen of Sheba," etc.) were mere names, the interest lay in his treatment of sunlight and atmosphere. The great French school of landscape painters of the last century—Troyon, Rousseau, Daubigny, Corot—were all in artistic style the followers of Constable, as the later impressionist landscape painters were the followers of Turner. Landscape had a wider range than any other branch of painting; but it was not an inventory of facts; its object was to show nature under various aspects of light and weather, to deal with the elemental forces of nature; it was an appeal to the primitive instincts of cultivated people looking at nature from the point of view of civilisation. The subject of a landscape was more determined by emotion than reason; all great landscape paintings were records of moods. In the power over gradation of light Turner alone equalled Claude, and, moreover, had the power of giving minute detail without losing breadth. The great difficulty in landscape painting was the sky, for that in fact controlled everything; the next was the painting of trees—the difficulty of making them *live*. Reynolds, who touched on everything, recommended the study of the general composition of a tree rather than details, though Bellini had shown that the complete impression might be got by infinite labour in detail. Constable, Turner, Rousseau, Corot, Daubigny, and he would add Cecil Lawson, saw trees as a whole; Corot invented a beautiful generalisation of his own for conveying the effect of foliage with light through it. Corot and other landscape painters who worked much in Rome showed the influence of Italy in their sense of style. Millet was the only one who approached nature with the simplicity of aim of the early masters, yet with a modern method. He showed the importance and beauty of a simple form of life. His figures were types; those of Bastien-Lepage, more accomplished as an executant, were rather individuals—portraits. Referring to the representation of action and movement, Professor Clausen said that the painter had to give an impression derived from what preceded and followed the moment of action represented, as in a group of labourers alternately hammering on a bolt we saw the various stages of the action simultaneously. Nothing in nature stood still, and the object of painting was not to take a snap-shot, but to convey the impression of movement. Even the difference between a moment of sunrise and of sunset light might be analysed into the difference between a progress towards more light and a progress towards less light.

Powis Castle, Montgomeryshire.

SOME extensive improvements are being carried out for Lord Powis at his seat in North Wales, comprising an electricity generating station, to be constructed in the rock, under Mr. G. F. Bodley's superintendence. Commonly known as Pool Castle, or Castell Côch, from the colour of the red sandstone of which it was mainly built, Powis Castle stands upon an eminence, at the foot of which lie the gardens, laid out after the Dutch manner, upon lines of terraces, in the midst of a hilly park, in which are some grand old oak trees, about one mile distant from Welshpool. The site commands a fine view of the Severn valley, with the Freiddyn hills on the marches beyond. In 1828-9 Sir Robert Smirke made some alterations of the interior, which modernised its general effect, and added a Doric order of four columns to the principal garden entrance. There are half round bastions at the angles, and the old gateway, flanked with two massive drum towers, opens into the principal court. The great gallery, from which an apartment has been cut off, measures 117 ft. by 20 ft., and there is a state bedroom which was occupied by Charles I. The castle has seen many episodes of border strife and warfare since its original erection 800 years ago by Cadwgan ap Bleddyn; and during a long period formed the stronghold of the lords of Powys. In 29 Elizabeth the castle and lordship were bought from the Greys of Powys by Sir Edward Herbert, second son of William second Earl of Pembroke. From his descendant, Peiroy Lord Powys, who held it for the King, it was captured in 1644 by General Sir Thomas Myddleton, whose artillery had greatly damaged the walls. The sister and heir of George last Earl of Powis, of the family of Herbert, married (1784) the son and successor of Robert Lord Clive, the victor at Plassey; their son Edward, second Earl of Powis of that house, assumed by royal licence the surname and arms of Herbert. There are views of the castle by W. Wallis and W. A. Le Petit, 1828, after drawings by J. P. Neale.

Mr. Grosvenor Thomas's Pictures.

AT the Woodbury Gallery in Bond-street there is a collection of about fifty oil-paintings, mostly on a small scale, by Mr. Grosvenor Thomas, an artist who, though English (or we presume so), seems to be better known on the Continent than in this country. He is a painter of landscape in the broad style of which Constable and Müller may be said to have been founders, with some apparent influence from Corot; the Corot composition though not the Corot texture. This influence is apparent in "A misty Eve" (20; the crescent moon half seen through the trees is a great deal too large) and in a larger and more important work, "Evening" (44), which at a distance might very well pass for a Corot, though the handling on a nearer view is quite different. The sharp oblique line made by the slanting birch-tree trunk across the principal mass of foliage is rather disturbing to the repose of the scene. The artist's favourite type of subject consists in old houses grouped with or partially hidden by trees; one of these, "Old Manor House, Lustleigh," is painted twice; No. 5 is the more important, and one of the best pictures in the collection; the white house is grey in the twilight, with a warm light from one of the windows, and the moon (again much too large) seen through the straggling trees. This kind of theme is several times repeated, and always with effect, though the work must be judged at a discreet distance; it is too impressionist to bear close inspection. "The Canal" (6) is one of the best of this class, also a moonlit scene, with a finely-painted bit of sky. Among others to be specially noticed are "The White Cottage, Studland" (11); "Solitude" (15); "The Mill" (23); and "Cluden Mill, N.B." (4). Is this last the Cluden of Burns's ballad?

> "We'll gae down by Cluden side
> Through the hazels spreading wide."

The sketches of sea are too amorphous—it is the fashion now to think

that any smudge will do for sea provided you have the colour right; but Nature "rules the waves" a little more than that. But as a whole this is an interesting exhibition, and out of the commonplaces of painting.

Messrs. Doulton's Work.

MESSRS. DOULTON have been exhibiting this week, at their showrooms at Lambeth, the work they are going to send to the St. Louis exhibition. This includes a case of their glazed stoneware, the characteristic product of the Lambeth establishment, and two cases of china ware from the Burslem manufactory. A good deal of the design and style in the latter is suggested by Sèvres, and it is as good as Sèvres ware. Some of the plates with floral designs are charming, but we do not approve of landscape and figure painting on porcelain, and especially not on the surface of a plate, which is the wrong place for a picture, and should only be occupied by purely conventional decorative design. The exhibits of Lambeth ware are admirable in style and design, and will uphold the credit of the house in this class of work. There are also some architectural exhibits, including a white half-glazed terra-cotta to which the name of "Carrara" has been rather unfortunately given, with the mistaken idea that it suggests Carrara marble, which it certainly does not. Two examples of fitted bath-rooms are to be sent out, with white marble walls and floor and white vitreous enamel baths; these are admirable in every respect except that of a water-closet being made a part of one—with a door and partition it is true, but there should be no connexion. American sanitary makers are very backward in this respect, and fit their most costly bath-rooms with a water-closet alongside the bath, which is barbarous; English makers should set the example of keeping the two apartments entirely separate.

THE ARCHITECTURAL ASSOCIATION

AN ordinary fortnightly meeting of the Architectural Association was held on Friday evening last week in the Meeting Room of the Royal Institute of British Architects, No. 9, Conduit-street, Regent-street, W., Mr. Louis Ambler, Hon. Secretary, presiding. Mr. Ambler said he was extremely sorry to state that the President, Mr. H. T. Hare, was suffering from a severe cold, which had deprived him of his voice, while the vice-Presidents, Mr. R. S. Balfour and Mr. Arnold Mitchell, were both unable to be present.

Mr. H. Tanner, jun., Hon. Secretary, having read the minutes of the last meeting and some nominations, the following gentlemen were elected as members:—Mr. G Sherrin, jun., and Mr. J. C. Moor. The following gentlemen were also re-instated:—Messrs. H. A. Douglass, C. J. Tait, G. L. Crickmay, and E. M. Joseph.

New Premises Fund.

The Chairman announced the following additional donations to the New Premises Fund:—Messrs. S. B. Beale, 3*l.* 3s.; Hampden W. Pratt, 2*l.* 2s.; W. L. Spiers, 2*l.* 2s.; J. C. Stockdale, 2*l.* 2s.; J. Soutter, 1*l.* 1s.; and J. Sulman, 1*l.* 1s. A vote of thanks was accorded to the donors.

The late Mr. Saxon Snell.

The Chairman said he desired to propose a vote of condolence to the relatives of the late Mr. H. Saxon Snell. Mr. Saxon Snell was a very old member of the Association, whom they all knew, and whose works they knew. Mr. Snell had a very large practice, and his death was a great loss to the profession.

The motion having been agreed to in silence,

Mr. Tanner announced the following donations to the library, *i.e.*, "Brickwork and Masonry," by C. F. Mitchell, presented by the publisher, Mr. Batsford; "Aids to the Mathematics of Hygiene," by C. B. Ferguson, presented by the publishers, Messrs. Baillière, Tindall, and Cox. On the motion of Mr. Tanner, a vote of thanks was passed to the donors.

As to the Making of Architects, with Examples of Draughtsmanship.

Mr. Maurice B. Adams then read the following paper, entitled, "As to the Making of Architects, with Examples of Draughtsmanship."

All who aspire to become worthy of the delightful pursuit of architecture will readily admit that the subject which furnishes the title of this germane paper is of paramount importance. To the members of the Architectural Association the enquiry naturally presents a theme of particular interest, and however opinions may differ as to the details of the curriculum to be employed in the making of architects few are likely to disagree in the abstract as to the vital character of a matter so intimately associated with the qualifications and equipment of those who are entering upon the profession of architectural art. We live in an age distinguished above all things by educational competition, while a correspondingly restless ambition actuates all sections of the community, and in nothing perhaps is zeal displayed more conspicuously than in technical educational projects intended for the bettering and amelioration of the professional and working classes. It is impossible for any class to remain indifferent in this matter, and no one who has to earn his own living, to put it on the rock-bed of existence, can afford to be left behind. The bread-winner has no choice but to work strenuously, and, if distinction is aimed at, no shifts or working by halves will do. The *sommités* of the profession assure us that "there is plenty of room at the top." In less fortunate circles, however, each year every worker no doubt finds more effort is needed to maintain a place of security on the ladder of success, and certainly more service of a higher standard of efficiency has to be rendered. For architects beyond all question the survival of the fittest alone remains a certainty, consequently a more excellent status is inevitable. Thanks to the enterprise of a few, an advance towards proficiency has already been made, and some steps have been taken to improve the methods in vogue for the making of architects.

The disinterested and capable work carried on by the Architectural Association during so many patient years furnished the basis of operation, and induced many to desire something higher and more complete. It thus came about that the educational scheme has lately expanded with the notable result that the Architect's Day School has entered upon its initial stage, and thus far may be accepted as an accomplished enterprise demanding our hearty and united support. The success attending this decided departure suggested to me the idea of promptly assisting its development by bringing about the free gift of the collection and buildings of the Royal Architectural Museum, so as to solve without further delay the long experienced difficulty as to the acquisition of more suitable accommodation in which to conduct this great work. As so many are still under the impression that the Museum was in financial difficulties, let me again say that this was not so, because the annual income which we for years past administered at Tufton-street amounted to between 1,500*l.* and 2,000*l.*, and the Museum had no monetary liabilities whatever.* It is a matter of congratulation that this important transfer was rendered possible by the unanimous concurrence of the Council and subscribers of the Royal Architectural Museum, who would not have handed over such an exceedingly valuable property to the Architectural Association had any doubt whatever existed as to the merits of its present educational undertakings.

We stand, however, only on the threshold of the movement, which has now entered upon another phase owing to the recently formulated design of the Royal Institute of British Architects for establishing teaching centres for architects in various big towns all over the Kingdom, under the advisory control of an Educational Committee at Conduit-street composed of some of the foremost architects and educationalists of the day. It will thus be evident that we have only commenced the task which stretches out with increasing interest, looming large in the potentialities of the future. The necessity of a more systematic plan of educating students in architecture is being more clearly recognised and more generally accepted. I am persuaded that nothing is better calculated to break down the barrier of union between those within and those without the pale of the Institute than this fundamental question on which all the best architects are united. The primary object of this enterprise which thus stimulates the imagination is not concerned so much in furthering professional interests as in promoting better building and more excellent architecture.

This is the standpoint whence I propose to consider my subject, upon the choice of which permit me to say one word. The committee, in arranging the series of specialised topics for discussion during the current session, requested me to contribute a paper on "Pen Drawing." Already, as some here may remember, I have read two papers in these rooms on Architectural Illustration and Drawing. It appeared to me, therefore, that we might with some advantage on this occasion diversify the consideration of draughtsmanship by carrying our conclusions beyond the limitations of the sketch book, the drawing-board, and the tee square. Besides this, since I relinquished my charge at Tufton-street, without being cognisant of what others have been doing in respect to this question of education for architects, I have realised the liabilities involved in the step which has been taken, and consequently appreciating fully the accruing responsibilities which are calculated to tax our resources very seriously, I beg leave to avail myself of this opportunity to impress upon everyone whom I may hope to influence the abounding need of a united effort to see this matter through successfully in the honourable disinterestedness of *esprit de corps*. We must rise to the occasion, and incidentally it may be timely to recall the American citizen's loquacious observation as to the "risk of attempting to stop half-way while going up a waterspout or down a waterfall." The unkindest chill of all would be that inflicted by the wet blanket of indifference among our fellows.

In respect to drawing, I do not intend to overestimate its value. I am fully cognisant of the current fashion to warn students against the trick of draughtsmanship. The business of an architect is to build, and not to draw. A good building perhaps might be erected without good drawings, but it is almost always certain that the best designs are shown by the best drawings. Michael Angelo said: "Let whoever has attained to the power of drawing know that he holds a great treasure." Art consists in the tangible and capable expression of an artistic idea, and good building as a definition is not intended only to mean utilitarian work, though of course it comprises structurally sound thoroughness and practically planned buildings arranged with due regard to sanitary construction. To all this there must be added, however, an embodiment of good proportions which shall govern its design by refined perception of architectural grace and taste in style. Its conception must be the result of personal thought and distinguished by the imprint of a vitalising individuality. These, surely enough, are the qualities essential to the making of beautiful and convenient buildings, each in its degree and size adapted to the everyday needs of our domestic and municipal life. The architect's chief endeavour, notwithstanding the surmounting weight of our commercialism, should be devoted to the production of thoughtful and artistic buildings worthy of our national greatness and in harmony with the aspirations and activity which distinguish the political, ecclesiastical, and philanthropic enterprise of the Empire.

In spite of the adverse conditions under which we not infrequently have to build, and the haphazard way in which competition designs are chosen, also not forgetting our many personal shortcomings, this enumeration of what ought to constitute our ideal is no pragmatic afflatus or Barmecide of buttery adjectives. We cannot regard with complacency the lost chances and wasted opportunities which so many pretentious and inconsequential buildings throughout the land continue every day to place on record. We must deplore the popularity

* This income of the Museum ceased, of course, when the School of Art was closed, and the subscriptions stopped on the transfer of the Museum property to the Architectural Association.

of such chaotic and petty productions, devoid as they are of all breadth and tasteful solidity, an eyesore and an incubus prepared for posterity. Ruskin justly said such work is beneath the mark of attack and the level of contempt. The order of the day is cheapness, and that has much to answer for, but monied imbecility is the worst imbecility of all. Most of the common architecture of our cities is simply that, both vulgar and expensive, seeking to impress by vainglorious noise, heralding its costliness from groundline to ridge as if obtrusive opulence might be accounted a virtue.

Although it will perhaps be said that the average quality of contemporary design has in some ways improved of late, no one can doubt that a vast room for betterment exists. Assuredly if we would develop the art of our time it will not be done by posing with a patronising aloofness of superiority, but by a manly grasp of the fascinations of the day, its possibilities and its needs. We shall never better our work till we give it more size and boldness, and by omitting outlay on finicking finishings spend more on thickening our walls, and in giving recess to our doorways and window openings. With regard to the making of architects, we must insist upon the study of solids and voids as a matter of the utmost consequence, for without a recognition of the importance of shadow and value of wall space our facility of draughtsmanship and paper proportions becomes illusive, and can avail us nothing in comparison with the spacings of light and darkness. "The one must be broad and bold enough not to be swallowed up by twilight, and the other deep enough not to be dried up, like a shallow pool, by a noonday sun." Bald crudities and uncouth oddments in building design possess nothing in common with fine architecture, though it may be admitted that fads and mannerisms have had perhaps their passing uses by furnishing a counter irritant to the normal commonplaces of ugly dulness of which we certainly have had our share. Singularity, however, is a vastly different thing to good taste, and "L'Art Nouveau" supplies no substitute for beauty in form or the spirit of good design. Such a perverse masquerade of singularity, in the hope of obtaining credit for originality, may for the nonce impart a degree of picturesqueness to the architectural horizon, and the flauntings of a shallow independence of precedent with the intent of seeming clever may afford a temporary relief from the sunless monotony of dismal propriety, but the debonair of to-day thus indulged only incurs the inevitable reaction of to-morrow demanding equally unsatisfactory stimulants in the form of other extravagances. Smart adroitness is a marked characteristic in all Barocco work, but its cleverness is only of the stop chamfer type, and soon tires.

Mistaken departures such as these are due to a disregard or lack of a just appreciation of true principles, with the consequent loss of worthy ideals, in the absence of which taste is accounted as if it consisted in the aimless accumulation of so much quaint bric-à-brac or the bathos of tawdry gossip in design. First one transitory craze and then another, with no more substantiality than a fashionable wall-paper, becomes the vogue in the chase after novelties, while, with the same intent, other caterers for popularity attempt to evolve an "eclectic" style by an incongruous blend of the peculiarities of several historic styles rolled into one. Before we can hope to educate the public in discriminating between such vagaries we must disassociate ourselves from this sort of thing and, by showing a better way, endeavour to overcome the complacency with which the public accepts the ugly in preference to the beautiful in all things belonging to building. How long are architects to placidly accede laying down to this prevalent choice of bad designs instead of good ones? In establishing a more systematic schooling in architecture we are taking the only reliable road to reform in such matters. The enterprise entails a serious effort, but that which is not worth an effort is not worth doing at all. Architectural laws can and ought to be taught in our training schools just as plainly as English, and spelling, and grammar are taught, and there is no reason why building construction treated specially from an architect's standpoint should not be scientifically taught and practically demonstrated in properly appointed workshops all over the country. The whole movement must be directed and considered as a unified explanation of building requirements in their bearing upon the actual practice of architecture, dealing with its problems in the round rather than in the flat or on paper, and we ought also to form, with this object, a well-selected series of exhibitions of modern building appliances of the most recent make, making the choice of improved contrivances and of all kinds of materials quite apart from any advertising considerations. In arranging such an enterprise as is here indicated, let it be clearly understood that those who have identified themselves with it so far lay claim to no special prescience, and have not the smallest wish to arrogate to themselves more than their share in this matter. The project must be co-operative in the sense that it needs the cordial help of all concerned. If we are unable to see eye to eye in all matters of taste we can and must stand shoulder to shoulder in furthering this undertaking for the improvement and far-reaching interests of our art. Exaggerated aspersions on the present want of method in the teaching of architects will only tend to alienate the more conservative among us, and unless the profession generally is united in a disinterested determination to work with a will in this affair the success which we hope for will not be realised.

It would be a mistake to only establish a Metropolitan Bureau of Architectural Education, and the policy adopted therefore should be on broad and comprehensive lines. In common with all cosmopolitan undertakings the working administration must possess a centre of organisation located in London. Without representative association no autocracy, however capable, can hope to compass the far-reaching necessities of this measure of professional education, which in that sense must embrace a national scheme. Members of our profession in our big towns understand as keenly as anyone the need of this democratic aspect of the affair, and Londoners will only be too glad to avail themselves of the valuable assistance of their provincial *confrères*. There must, of course, be an unhesitating recognition of the central authority, but to obtain this hearty union of forces architects outside the London district must be accorded a proportionate share of the management. The opportunities to be thus afforded will, I believe, accomplish more to raise the status of the profession throughout the country than any scheme of Registration by Act of Parliament could possibly do. No one pretends that a panacea for all our needs in this matter will thus be obtained, but assuredly the busy murmur of the working hive of willing students should rouse the profession from its lethargic lullaby, which can no longer be indulged in with comfort even by the prophets of a fanatical belief in laisser-faire, owing to the entire change in the condition of things brought about during the last fifty years. It must be taken for granted that a few well-meaning individuals will prefer a sort of mugwumpian isolation so peculiarly attractive to the outsider, but I am optimistic enough to believe that the needs of this educational development when clearly stated will awaken the enthusiasm of all who have the interest of good building at heart, and especially the younger and more ardent members of the profession. "Youth without enthusiasm means a maturity without faith and an old age without hope."

There is no notion of attempting a genesis of a fresh cult or the invention of a new style, and we are not concerned in the revival of any bygone phase of building art. Enough energy has already been expended on such like sterilised enterprises by progenitors of defunct forms or details. It is a matter of indifference whether we have old architecture or new architecture, lintel or arched construction, but it is of the utmost consequence whether we have architecture worthy of the name. Our endeavour should be concentrated in producing beautiful work, caring but little whether it is new or not. Time alone can insure a true evolution of style which relies on the labour of multitudes, and not so much on the inventive efforts of the few. "The able architect will probably adopt as his own any type of the day which may be going, and, working at that, will impress it with freshness and individuality, taking liberties with his text no doubt, though not in defiance of its rules or for the greed of notoriety, but he will invest it with originality just in the same way as a master of speech will use the vernacular, with freshness and style of expression to convey ideas which words alone, without such infractions, could not adequately describe or graphically indicate." Such a gift comes from the gods, and cannot be given by any School of Arts or Royal Academy, and no examination or training can insure it. I do not presume for one moment that the best studio equipment or the most cultured class system ever invented will produce a single architectural genius, though it is possible that by such means a potential master in architecture might be discovered:—

> One of the few, the immortal names,
> That were not born to die.

The most that we can hope for in a general sense is to render likely a levelling up towards an improvement in contemporary work more in harmony with the canons of architectural taste by leaving no longer the making of architects as a matter of chance to the happy-go-lucky rule of thumb. With this end it is desirable to co-ordinate and centralise our scheme of training. Let no one suppose, however, that anything approaching a sort of professional forcing house or system of cram is in process of contemplation where artistic capacities will be impaired by abstract theories and technical prolixities. It is to be an "occupation" school conceived and conducted by architects for architects, therefore the artistic and inventive powers of no one are likely to be reduced to the level of mechanical plodders by any inflexible type of regulation teaching in dealing with matters of design. In the more advanced stages of study I presume the advantage of practising architects of repute acting as visitors will still obtain. The croakings of those who seriously warn us do not appear to me to be justified when they anticipate that the asperations of artistically minded pupils will be stultified by scientific teaching of this sort. These worthy people seem to fancy that we had better by far leave things as they are, with the assurance that the best will always come to the top. Absence of taste, paucity of ideas, and lack of knowledge are not quite identical, but they generally, however, exist together. Some have argued, and argued well, that poverty is no hindrance to genius, and Mr. Carnegie lately said that the greatest inheritance a boy could possess is poverty. Doubtless these conclusions can be supported by special experiences, and it is an old saying that man is the architect of circumstances. None the less it is obvious that forethought would demand a guide to successfully climb the Alps, and no man would wisely put to sea in a skiff.

To the "individual of infinite resource" adverse circumstances no doubt furnish an incentive to effort, while poverty may develop the acquisitiveness of genius; indeed it is open to question whether impecuniosity ever hindered the ultimate advance of anyone who is possessed of a real and enduring love of his art. Architecture has, however, been adequately described as the most difficult work a man can put his hand to, and when a student affects an artistic consciousness it will, nine cases out of ten, prove a great personal gain to him to learn that the pursuit of architecture demands more than a superficial æstheticism to enable him to cope with the task he is taking up. If, in the tenth instance, such a discovery on the part of the student should prove too much for his artistic precocity, then surely the exception which proves the rule must be a weakling indeed.

Whatever disadvantage the English pupil has experienced as compared with his continental contemporaries, I think we are justified in congratulating ourselves that anyhow he has escaped the stereotyped mannerisms and academic formalisms so conspicuous in much of the otherwise accomplished modern architecture abroad, though we are bound to recognise the traditional methods distinguishing the best modern buildings of the French. The over-accentuation of individuality so detrimental to the uniformity of effect in our English towns is chiefly due to the absence of comprehensive schemes compatible with the dignity of architectural treatment. The uncompromising insistence of personal rights by different owners of circumscribed sites precludes anything approaching the grand scale of setting out the façades of our thoroughfares on the lines adopted in France and Germany. The fiasco of the L.C.C. Strand-façade improvement scheme is a case in point. Moreover, the position insured to architects in reference to the Governmental Departments of Public Works abroad has no counterpart in this country. While recognising this difference, we do at least obtain a picturesque personality in our work which, however, is gradually becoming more subservient to recognised methods of design, and it is a gain also that the British student does not waste

time in emulating the foreign system of draughtsmanship which starts with the thinnest of lines and finishes with shading and sponging, and sponging and shading, till the utmost finish is obtained and all individuality is gone. Our drawings are too often mean and poor, and our pupilage experiences are frequently a disgrace, but I am convinced that for practical efficiency, as also for the retention of what semblance of artistic tradition remains at all in England, no satisfactory substitute for apprenticeship under really qualified and conscientious masters is at all probable, and therefore we shall do well to supplement and improve this old plan, instead of attempting to supersede it by importing German ideals *en bloc*.

The general consension of opinion as to the experience resulting from the German and other foreign colleges' course of four and more years of class training amounts to this, that when young architects so taught commence to practice they display, as you might naturally expect, a conspicuous want of practical knowledge, and fail from lack of an acquaintance with the application of much that they have theoretically acquired, so that the older architects abroad recommend at least a year's apprenticeship after leaving the schools, and for those who cannot thus afford another twelvemonths in learning their business and can do without holidays, it is advised that they shall do office work during their vacations. In any event whatever method is adopted the most must depend upon the aptitude of the pupil. A man ought anyhow to be a 'prentice before he can take up the position of a master with advantage, and the best pupil needs the best teaching, for taste and ability may run wild if not curbed and properly cultivated. A year's probationary work in such a school as we are intending will afford the student an opportunity prior to his articles for ascertaining whether the calling of an architect is likely to prove congenial to his particular capabilities or not. If by this process of elimination some failures could be prevented so much the better for art and for the individuals themselves. Much of the mediocrity of our everyday designs would be spared us if these reasonable precautions were taken. A smattering acquaintance with many things, or a casual fancy for all styles of work will not qualify a man to design good modern buildings any more than an all-round elementary course in several languages would enable him to write well in any one of them.

Whether it is ever probable, even if it were desirable, that the Government will establish a National School for Architecture in this country is another question beyond the range at present of practical politics. Our obligations, however, in the meantime are definite and clear, it being evident that architects must combine in some well-concerted scheme to bring the study of building art and its allied technical crafts into conformity with the higher educational developments of our time, which have made such overwhelming advances during the past few years in France, Germany, and America. England is shockingly behindhand in technical training all round, as Sir Norman Lockyer demonstrated in his British Association address last autumn. It would be worse than folly for architects to ignore this aspect of the subject from a professional point of view, which manifestly is of vital consequence for every good reason. The architects of this country must realise their position in this matter and take care to befit themselves in order that they may hold their own with engineers and kindred callings, and if architects are to occupy with credit an assured place in current affairs quite as distinctively and well recognised as those held by the legal, medical, and other professions, thoroughness and efficiency must be guaranteed. Would we secure the patronage of the public, we are bound to qualify our students in order that they may merit its confidence. Success is rare, and general rules can only be provided for ordinary work, and not for anything requiring invention, and as to how far the individual will compass success must unquestionably in the main depend upon himself, as well as upon his capacity for continuous labour. The older he grows the more fully will he understand that self-reliance is the best help of all. Distinction comes inevitably of personal resource, and no reputation will endure which is not based upon real artistic merit. Friends and influence, of course, are most valuable in securing commissions, but it by no means follows that luck of that kind alone will insure a reputation that will live. No buildings capable of affording lasting pleasure and delight the imaginations of generations are ever likely to be produced by men who are satisfied to remain architects only in name, content to relegate all the difficult problems of their building work to the quantity surveyor or to the contractor, or the builder's operatives, retaining only to themselves the fancy part of their business, which may be acquired in a casual rough and ready fashion, and leaving the detailing and even much of their so-termed designing to their subordinates and assistants. Of such inefficiency we have had ample experience with all the attendant evils of vicarious practice so familiar as to need no further amplification. Ruskin somewhere says, "it is foolish and insolent to imagine that the art we practise is greater than any other, but it is wise to take care that in our hands it is as noble as we can make it." There can be no nobility in taking credit for work done by others. The architect must think for those whose duty it is to execute his designs, and must convey the intentions of his mind to them in such a way as the weakest capacity can grasp and the feeblest hand can execute. Whatever may have been the position of the architect in the Middle Ages, and whatever his methods then were, he can no longer now depend upon the workmen as if they had been brought up on traditional lines, for the last remnant of the vernacular in architecture went the way of Queen Anne nearly two hundred years ago.

The architect can nowadays only calculate on the co-operation of artisans subordinated by labour emancipation, and if satisfactory buildings are to be produced the architect must rely upon himself. Some theoretical reformers decry such a position for the modern architect, to whom they would accord a much less important post, permitting him only to confine his attention to the shell or carcase of a building, leaving its enrichment and elaboration in an architectural sense to trained specialists from arts and crafts schools managed by professors, the notion being, as would appear, that architecture can be produced in a co-operative system of supply, here a little and there a little as if it were an applied art. In advocating this fallacy its authors overlook the risk of incongruity which must ensue, no matter how excellent individually the various moieties of the work might be. The controlment of the architect as the master builder is essential to the unity and harmonious combination of the whole undertaking. Everyone of practical experience, in dealing with the methods of capital and labour, knows perfectly well how impossible any such fantastic scheme of working would prove to be under the existing conditions of protectionist trade-unionism on the one hand, and the troublesome capriciousness, shall I say, of the egotistical handicrafts man on the other. It is to be hoped that no student will be carried away by any such illusive propositions. Every architect worthy of the name would certainly only be too glad to give a capable craftsman as free a hand as possible, and willingly accord him every credit for his valued assistance in the execution of the work. But in no sense can architecture be treated as an applied art, therefore we need not further discuss this subordination of the architect in the way propounded. He of all men engaged in building operations must be responsible for the design and the supervision of its execution. I confess but little sympathy with those clever folks who advise students to become skilled artificers in some one or more of the decorative crafts, telling them that, by becoming ornamentalists in plasterwork or adepts in smithery, they will become better master builders. On the other hand every man up to a certain point can but be the gainer by some practical experience in carpentry and joinery. I speak from more than theory, having been myself an apprentice to a builder at the bench. It is impossible, however, for any individual to become manually efficient in all the branches of the building trade, and in my judgment a young architect's time and energies would be better occupied in acquiring a general knowledge such as the scheme now promulgated will render possible. The usual methods of practice are quite onerous and complicated enough without inventing eccentricities of working for the sake of a passing craze.

We are thus brought face to face with the initial conditions, which allow but little choice in this matter, consequently in the making of architects one of the essentials peculiar to the calling must consist in a thorough initiation of the student in business management based upon an intimate acquaintance with the technical details of contracts and their legal consequences, as well as Building Acts and By-laws. It is no longer sufficient to relegate such matters to building surveyors, as if such questions were of no concern to the architect. He is the responsible person who has to decide between the parties. If he is to advise his clients, and guard their interests, it will not do to seek shelter behind the flimsy assertion that he is an artist first and can only be expected to deal with business affairs as an after consideration. Architects in large practice possibly can afford, and must, to a certain extent, leave such things to subordinates, but when considering the question as to the grounding of students in the architect's business, we need to remember that they will have to commence at the foot of the ladder, and, necessarily, it will be a long while in all probability before they can act independently as masters of the situation in so complete a way as those who enjoy the privileges of being at the top of the tree. When the public realises that all the business associated with the work of an architect in respect to his buildings is personally his own the world will cease to cavil at our profession so frequently, and those architects who base their reputation on the determination of making their designs and details absolutely their own handiwork do more to elevate the calling of the architect and more to insure good building than is otherwise conceivable.

As architects we have more and more to attend to a considerable amount of purely business routine, and are expected to deal with highly technical problems not infrequently. We cannot afford to limit our vision from one point only, but have to look at our work all round. Builders are becoming gradually less and less trained operatives themselves, and they are largely assuming the position of financiers, conducting their business with a staff of departmental managers, who in any event are expected to show a profit in all trades. Do not misunderstand me. I know there are builders who are builders properly so-called, with whom it is a pleasure to work, and all honour to them. But in many cases an architect can no longer rely upon the impartial advice of an experienced tradesman, and young architects have to confront facts as presented by the ordinary rough and tumble of the contract system, whereby, instead of the united efforts of all concerned being directed towards the best available result with the materials and funds provided, the opposing nature of the relative interests of the two contracting parties are now more than ever recognised and treated in an understood way as conflicting. From the commencement to termination of a job this influence is more or less evident, and naturally such a state of affairs entails much thought and no little anxiety on the part of the architect even if nothing more serious actually happens, a condition of things very probably insured by the fact that forethought has prepared for contingencies.

Considerations of this nature may be abstersive, and likely to be accounted tiresome in this place, but high art or no art, they do form part of an architect's business. Practical knowledge of this sort cannot be acquired in school classes, for office routine alone can really teach it. It is one thing to be taught carpentry or joinery in a polytechnic, where stuff is supplied without stint to practise upon, and quite another thing to go to work at the bench in a builder's workshop, as I did before I was articled. You are not long in understanding there, I may tell you, that material has to be handled and utilised in a business-like way. By following up this aspect of the matter so that materials shall be employed with a commonsense regard to workmanship, and thus reasonably adapting them as a means to a definite end, we shall invest our designs with truth of treatment and so go far to gain possibilities of distinction. Unless our multifold materials are employed expressively in an enlightened spirit by the workman there can be no sense of fitness and beauty in our buildings. The responsibility of providing for this expression rests now with the architect, consequently it is of the utmost importance that our students shall be trained in the theoretical and artistic, as well as practical, use of materials, not forgetting, of course, their structural nature and value, particulars about which every learner of building work ought to know. It has been suggested that by a befitting application of new materials a new

style of architecture at no far distant date might result deserving to be associated with the Twentieth Century, but assuredly this cannot be expected because it is clear that materials can never alone produce either style or design. Brains are required to bring that about. Bricks and stone remain bricks and stone, iron and terra-cotta remain iron and terra-cotta until the architect can make them something else, till he imparts into their use a spirit of thought and vitality which constitutes all the difference in the world between the four square elements of a common piece of building and a living creation of art.

We are told that artistic fruition exists beyond the scope of a drawn design, which at most is a mere paper pattern suitable for transmission through the penny post, and, further, that the realisation of a building depends upon the millions of handstrokes of the artificer's work which consummates and brings the creation into shape. This sarcasm, so tersely expressed, might be partially true if we chanced to be employed in constructing Egyptian pyramids, but unless we wish to emulate the chaos generally associated with the prehistoric building of the Tower of Babel, we shall scarcely be induced to rely in these days solely upon the handstrokes of the British working man. Whatever theories we may indulge in as flights of fancy during holiday hours, for real work the student must take care that his own handstrokes shall be unmistakably based upon practical knowledge, particularly in making his working details, insuring their accuracy, and workmanlike thoroughness, in which every part of his proposed building is clearly worked out after the design as a whole has been drawn and thought over to a smaller scale. Such diagrams may be quite unattractive as drawings, and perhaps fragmentary looking; in some cases they will be left unfinished in pencil or chalk, and generally it will suffice to leave them uncoloured and not inked in.

The leading consideration above all things is the design itself, and to insure its proper execution everything from the outset depends upon showing what is intended with a well-defined precision, leaving nothing vague or undetermined, so that these details shall furnish an unmistakable guide to the quantity surveyor, the prime cost clerk, the foreman in setting out, the clerk of works, and all the trades engaged in the handstrokes of its execution. When the job is done these drawings form the basis of the settlement of accounts, and at times have to be used as evidence in arbitrations. This calculating consideration concerning contracting jobs is contrary to our artistic proclivities, and, if none of us would by choice select such commonplaces, there are architects who by bitter experience have found out to their cost the importance of giving these things more study. Whatever may have been the practice before vernacular modes of building died out, there is only one way now of insuring good building and artistic work, whether it is carried out under a schedule or contract, and that is by making working drawings such as I have described.

The collection of office drawings now on the walls of this room are the best illustration which can be given of what I am advocating, and if this exhibition brings home the lesson thus insisted on the object of our meeting will have been secured. I am not sure that some apology on my part is not due to my brother architects for recapitulating so many elementary and self-evident observations on matters which are familiar enough and ordinary, though in the making of architects I fancy it must be admitted they do not always receive the attention they deserve. The cynic has said that there are now no masters in our Israel, but whether this reflection is strictly accurate or not, these drawings, so kindly lent by some of the most accomplished architects of the day, demonstrate what studentship has done in their case towards a thoroughness of detail in producing buildings unrestrained by mere precedent or the concomitant mannerisms of past styles. We recognise in their work much to delight us, and the advantage of their example cannot fail to inspire us. It would be invidious to allude to any individual drawing or describe any work in particular, but I will venture this statement that five and twenty or thirty years ago it would have been difficult to bring such a thoroughly good and representative assemblage together as that which is gathered here to-day. My difficulty has been not so much in obtaining such drawings, as in deciding when to stop in inviting contributions for the exhibition, which had to be governed by the restriction of space.

Never before has skill in draughtsmanship of the right sort been more capable than it is at the present moment, and if drawing alone could insure good building, the architecture of the twentieth century would be of surpassing merit. Drawings necessarily only furnish the architect with his chief and indispensable "instruments of service," and unless he has intuitive taste and inventive capacity, the pen or pencil, however facile the hand may be, will not alone furnish him with ideas, or give him what is called "the power of design." The best architects take good care to have their designs well drawn, but I suppose no one realises more entirely the shortcomings of drawing than a good architect. After all, it is the building itself by which he must be judged. Few things are more deceptive than shadow-projected and worked-up elevations unless it be show perspective drawing, and particularly the accommodating pictures of the perspective expert. Sketches and exhibition draughtsmanship are most interesting and useful, but that is a branch of the subject with which we are not concerned to-night, and so for once the pictorial must give way to the practical.

In our consideration of working details the student must remember their eminently conventional character, and as such they fail to give the effect of the materials intended to be employed, while the arbitrary tintings, used to show the workpeople and measurers how the several materials come together, convey no guide to the determination of more than the most elementary and incomplete ideas of the architectural result as a work of beauty. The very lines which go to make up the drawing tend to mislead any but an experienced judgment. Thin lines make a design appear weak, and heavy lines give an undue importance to minor points, and by over-accentuating the jointing a fictitious effect is imparted. Burges once said in this room "we cover our drawings with such quantities of lines that we finish by deceiving ourselves as well as our clients." It is dangerous and unwise to depend upon our drawings unless we possess an intimate acquaintance with materials, and because so many have not cultivated this knowledge as they might well have done the failure of much of our modern work may readily be accounted for. The importance of texture is thus overlooked quite as much as a proper appreciation of scale and colour. The value of surface finish, too, befitting various materials, does not receive the study which ultimate good effect demands. It is desirable to think in the round and design in perspective with what has been called a modelling mind. Drawing in some degree may help us in this, but it cannot enable us to judge as to the weathering properties of materials or their liability to accumulate dirt, and no artistic architect will reckon such considerations as of small concern. They are indeed of the greatest consequence, sadly neglected as they often are, and that by some whose negligence would be least expected.

Then, again, if we become too much monopolised in the elaboration of drawings, we are apt to forget other more important matters, such as, for example, the necessity of employing, as far as possible, the natural local materials of the district in which we are called upon to build, so that our work shall successfully constitute an indigenous part of the crust and surface of the earth on which the users of our buildings live, and not remain a fabricated excrescence imported from elsewhere, or a toy upon the ground which, save for the need of someone's roof-tree, might, as Morris said, have remained a neatly-drawn design on the walls of some architect's office. Not only should we use the countryside materials to hand, but the type of design employed must befit the nature of the materials available, insuring in this way the charm of local colour. How frequently the reverse of all this is seen. For instance, mansion houses in the style known as "Late Classic" with porticoes to match, are imported to moorside sites and worked out in coarse millstone grit, which before long inevitably resumes its rocklike character; or, to mention another analogous absurdity, you will come upon neat, smug-looking, whitened, rough-cast houses roofed with green Westmorland slates in the heart of Sussex, where flints and red bricks and sandfaced tiles or Horsham slabs abound. Precisely the same patterned houses, green woodwork, red curtains, and "tallboys," can be seen away down in Dorsetshire or up in the Wolds of Yorkshire, suggestive of the equally arty picture post-card, produced and inexpensively distributed with like facility, on the principle of the "Penny plain and twopence coloured." It is this sort of thing which furnishes an excuse for the taunt that we are only "paper architects."

There were, of course, no splendid draughtsmen in the thirteenth century when draughtsmanship was very fragmentary and indifferent; and, for that matter, we also must admit that in all probability a vast number of beautiful buildings all over the land were put up without any architects at all in the now understood annotation of the term, "when the roughest draughts possible were made out for these buildings, and they grew up simply without any intermediary between the mind and the hands of the people who actually built them." There were no polytechnic professors or art lecturers either in those days, and no plethora of books or log-rolling critics to surfeit with commentaries the fringe of art. Professional journals then did not exist, neither did assessors nor competitions! Things have changed, and the causes are various, but it is pure affectation to run down good drawing which does not constitute paper architecture, neither is it at all probable that a man who is workmanlike enough to draw well will be content to build badly. Work has now to be carried out under a totally different set of circumstances. The arbitrary and so-called economic divisions of trades, the principle of contracting and sub-contracting, the consequent prevailing deterioration of interest in the work itself for its own sake, and the degenerated minimum yield of labour in return for the maximum amount of pay procurable, present the mercenary and rotten ideal which unfortunately dominates the current labour market of what is called skilled handicraft. The consciousness of self-dependence and the habit of individual judgment possessed by vigour of character under such environment must be well-nigh impossible. When craftmanship flourished "dumping" was unheard of, and labour questions had not been exploited by big capitalists on the one hand, and by paid agitators on the other. Workmanship, in consequence of big factories and huge combines, has become divided and subdivided in rigorous subordination so completely that the worker instead of knowing his work from start to finish now takes his place only as part of a gigantic machine, plodding on with brainless indifference at a set of unvarying details turned out by the hour or by the piece. Prices are settled at a fixed and uniform consideration in cash according to amalgamation rules formulated, irrespective of good workmanship, as such, by vicarious directorates, who assume a convenient ignorance when employés are underpaid or the employers cheated, finding an excuse by reference to the sum of dividends obtainable. Trade unionism became a necessity, but by doing nothing or next to nothing to insure a tradesman being a skilled workman at his trade barren badness now passes muster where honest impartiality ought to exclude such rank incapacity.

The building trades are hampered in every direction by labour questions, which thus tend to make individuality and personal excellence an exception rather than possible. For these and other reasons the architect's position is assuming an increasingly essential factor, at least in the character of overseer, in all building enterprise where efficiency and economy are provided for. In further ways, too, the scope of the architect is growing in importance. Though our relation to craftsmanship is entirely changed, many advantages no doubt are available to the profession never dreamt of by our predecessors, even if they cannot have known the pressure of competition as we do. Slipshod architectural pretensions no longer will serve; let us hope they have had their day, and, so far as in us lies, we must endeavour to make it as difficult as we can for the charlatan to exist any longer on unqualified ineptitude or on borrowed plumes, till he has become as extinct as the Dodo. By insisting on efficiency, our scheme may, in a sense, be termed aggressive on the principle characteristic of Nehemiah, who built with the sword in one hand and a trowel in the other. Our indubitable source of strength must be looked for in equipping ourselves for the occasion and by graduating for the work which the public has in store for us to execute, remembering that success will be attained "much less by extraordinary intellectual gifts than by an extraordinary strength and tenacity of will, by the abnormal courage,

perseverance, and work power that spring from it, or by the tact and judgment which make men skilful in seizing opportunities, and which, of all intellectual qualities, are most closely allied with character." Prating plausible platitudes about high art or the commonplace of the need of industry will furnish no excuse for not providing adequate training for our pupils, or for failing, any one of us, to do our very best :—

> Thy purpose firm is equal to the deed;
> Who does his best his circumstance allows,
> Does well, acts nobly; angels could no more.

Miserable failures may be met in every walk of life protesting that they have done their best. If so, they display a sorry lack of method in the doing of it, and anyhow, while loitering in the encumbered lane of mediocrity, have missed the only high road to the market-square of success. This road is called "efficiency," thence alone leads the narrow path for the few destined to tread the pleasaunce of Fame, peopled only by those who really did their best.

Towards the close of last year all Italy was celebrating the centenary of the great Italian poet Alfieri, who rejuvenated the literature of that country through his tremendous influence on the life of his people. His abilities were seconded by a determination to be satisfied with nothing short of his very best, and thus it was he rose to fame. His first play gave him so little satisfaction that he *rewrote it three times throughout* before it was ready for the stage.

When Mr. Edwin Austin Abbey painted his famous picture of the Trial of Queen Katherine, it took him many months of hard work, and when the painting was finished people praised it as a masterpiece. The painter himself was not so satisfied, because to his critical eye the red of the Cardinal's robes looked a shade wrong. No one else suggested this lack of harmony in the colouring, but although the picture was completed Mr. Abbey thought it could be improved, so he set to work with his wife and servants to scrape away all the offending red from the canvas, a process which occupied six hours. The artist then repainted the costume of the Cardinal and so finished his picture, furnishing us with another notable instance of unqualified resolve to secure the very best.

Literature, science, and art afford other like examples, while commerce, politics, and the arts of war furnish the page of history with pictures of men who did nothing short of their utmost and their best. This resolve to do one's best is not incompatible with the natural distaste for the competitions and contentions of life which so many really artistic men feel. The impulse of ambition holds with such a secondary place, and it is not always the strongest man that is the most ardent climber. To not a few the tranquil valleys possess a greater charm than the lofty pinnacles of affairs. We can never grasp the sources of another's inspiration and, whether we are most influenced by the past masters of our art or rely more on our contemporaries, their influence can only fructify by our own unaided effort. Pugin influenced a generation, and thanked God he had been permitted to see and study the eastern transepts of Beverley Minster. Who does not remember the inspiring force of George Edmund Street, and who of all of us acquainted with the charm of John Dando Sedding's personality can ever cease to be thankful for his Heaven-sent enthusiastic fire? No ghost was secreted in his office; he did his work himself and rejoiced in the doing of it, consequently his buildings are full of interest and always repay a visit. Few architects can draw the figure as William Burges could. Go to Studley Royal and you will not fail to be impressed by his ornate, Frenchy-Gothic church, built there for the Marquis of Ripon, standing at the top of the noble avenue and terminating its vista. Notwithstanding its suggestion of exotic origin, always evident in Burges's work, all sense of incongruity is dispelled by the individual personality which distinguishes the design in all its parts down to the smallest detail. Refined taste, exquisite figure work, and a free play of fancy within and without, is the result of loving study ungrudgingly bestowed, leaving no doubt whatever as to Burges having done his very best. Compared with Fountains Abbey hard by in the same park, this florid little church necessarily takes a minor place, and in this comparative respect he had unquestionably an extremely difficult task. None the less, because of its force of individuality, the building holds its own, leaving a lasting memory of undeniable excellence and recondite iconography. John Loughborough Pearson's work delights us just the same. He told me he would rather carry out one building in this thorough manner than be employed on half a dozen which he could not personally work out in detail himself. You have only to look at his buildings from St. Peter's, Vauxhall, onwards in point of date, for the best evidence of his skill, unsparing industry, and artistic sincerity. Street, his personal friend, trusted to no other hand than his own in the drawing out of every feature of his designs, and it is well known that he modelled some of the ornament in clay for the carvers to work to at the Law Courts. As a draughtsman he was a master among the few of his time.

> His armour was his truest thought
> And simple truth his utmost skill.

The Gothic revival may be dead so far as the style of contemporary work is concerned, but it undeniably influences the present generation of rising architects in ways not exactly apparent on the surface of things, and so long as the buildings of such men as I have named exist their work will live. The same is true of Nesfield and Bentley, and, in the making of architects, do you not think that the skill of Teulon, Butterfield, and James Brooks as well as George Gilbert Scott, jun., will furnish fine object-lessons in the future? Their work contrasts with that of the famous Sir Gilbert Scott, whose establishment at Spring Gardens furnished the most notable example of the possibilities of work carried out under wholesale conditions. With such a number of commissions it was impossible for the principal to draw out or even know about some of the designs issued from his office, consequently the work bearing his name is unequal, distinctive in one instance, and failing in interest in another. The pick of the succeeding generation of architects furnished his staff, though it cannot be said that their master founded a school. His R.A. lectures on the development of the Dome and Gothic architecture rank among the best scholarly attempts to further the making of cultured architects, and he was the real founder of the Royal Architectural Museum.

The purport of this retrospective glance in connexion with the show of working drawings hanging on these walls, is to direct the attention of some of our younger members to the necessity of their doing what the up-to-date student of thirty years ago did in measuring up old work of pure architectural merit. The battle of the styles has ceased to interest people, and very few at the present time show any real interest in mediæval architecture at all. No one hardly takes the trouble to draw or study it. This is a great mistake, for it is no use depending on the photographic camera, which in some ways is so helpful and in others so harmful in the making of architects. One drawing thoroughly made for study is worth any number of snapshot prints. Students will never graduate as architects on photography. The authors of the detail drawings collected here to-day learned their business by personal familiarity with the buildings they studied, and the knowledge they acquired was the result of drawing old work on the spot.

Tabulating dates, contrasting periods, and accumulating photographs, or filing illustrations of buildings may be a useful amusement enough in its way, though, as contrasted with the actuality of an architect's business in real design, leading strings of this kind seem more in keeping with the fumbling stage, which, if persisted in, slackens all energy, satiating the mind by analysis, that kill-joy so destructive of all possible dreams of beauty. By all your powers seek to gain a more intimate grasp of the spirit with which old work was inspired. By a loving and intelligent study of its structural design and aim a reflex of its vitality and charm may assuredly be caught, but before you attempt any process of dissection stop, for remember murder takes the priority of all dissection, leaving only the remains of death. Bleach the dry bones never so white, the spirit, which alone could make them live, will, by such inquisitiveness, be killed and lost to you for ever. If you would become familiar with the inherent beauty and motive of historic buildings learn more the why and wherefore of their local traditional differences and note how available materials influenced the work in different buildings erected under the altered circumstances of various times, exercising also an appreciative discrimination by which to avoid that which is only curious and strange. Leave for secondary importance that which has become interesting merely as archæological treasure, and by thus recognising the true essentials embodied in the plan and constructive design of old buildings you will find in them an unerring guide for the advancement of your art and subsequent designs. We need never hesitate to adopt as the basis of our own work that which has been done before, incorporating it as our own.

Those who speak slightingly of the so-called "Gothic Revival" do so with more assurance than knowledge, and are apt to forget what we owe to the writings of Pugin, Ruskin, and Morris, names which are severally associated with the succeeding phases of that movement. Doubtless, the rising generation enjoys many advantages unknown to those who preceded it, but I sometimes think it might be useful to remember with what intense love of their work and with what enthusiasm these Victorian mediævalists carried out their undertakings. It is also wise to recall, too, occasionally the day of small things. For instance, it was in an old shambling cock loft located in an obscure slum almost on the mudbanks of the Thames that Ruskin, Cockerell, and Beresford Hope held crowded audiences in rapt attention while they lectured on the charms of Gothic architecture midst the self-same collection of examples and casts which now have been inherited by the Architectural Association. Many years since, in Oxford, at a meeting held in that university for furthering the erection of perhaps too ambitious a group of educational buildings, Max Müller recalled the fact that "great things had often been done in hovels." William Burges, thirty years ago, when the Architectural Association was by no means so important a body as it is to-day, called it "the life-blood of the profession." Our society is going stronger than ever, and you will need perhaps little imagination to picture to your minds with what generous zeal Burges, Street, and their contemporaries of the mediæval school would have gathered round in active support of what we are endeavouring to accomplish at the present time. I am well assured that Brydon and Sedding, had they been with us too, would have shown no slackness in helping our project on. Such names as these from the immediate past are names to conjure with, for the mere retrospective thought of their enterprise at once invigorates our enthusiasm and animates our determination.

To what extent this educational scheme may be developed it is impossible to foretell, but friends have not been wanting in ambitiously advocating the founding of a "National School of Architecture." It will be hardly worth while to battle over this nomenclature question. Provided better architecture is the resultant, it is of no consequence whatever whether the school which insures such improvement be "National" or not. Personally, I doubt the principle of attempting to produce either good painters, sculptors, or architects in any strictly Governmental School of Art. I need not dilate further upon that matter, but it appears to me that the wiser plan must be to retain the control of art occupation teaching as far as possible in the hands of those who practise the particular arts in question, working, as far as circumstances will allow, on the lines of the historic art workers' guilds. Academical architecture appears to many as synonymous with a *caput mortuum* of pedantry and formalism, so fatal to living art and out of accord with the ends we have in view. To justify this effort the work in itself must be worth the doing. Academic architecture cannot serve, examinations in artistic qualifications are out of the question, and Registration, after all that its advocates may urge in its favour, would inevitably fail as a guarantee of artistic ability. Education, even when based upon a unified system of technical training such as we are advocating in accord with university teaching, can but do little in the absence of a nascent fitness on the part of the pupils in so far as architectural design is concerned. To sum up, therefore, the whole matter may be said to be embodied within the scope of the quotation with which I propose to conclude. The paragraph itself, however, must be read in the light of the educational advance which has been inaugurated since it was originally written: "The aim and object of an architect is to *build* beautifully—this is, of course, including conveniently—for a building that is beautiful but inconvenient and unsuited for its purpose can be of no permanent interest or value. . . If he sits in his office making picturesque drawings he may be an accomplished draughtsman but he is not an architect. If he spends his time chiefly in calculating the smallest amount of material that may be used in walls and girders to give a

required amount of stability, caring little or nothing about its design, i.e., 'architectural construction,' he may be an engineer or builder, but he is not an architect. . . Architecture is on precisely the same footing as painting and sculpture. A man must, beyond all doubt, be endowed by nature with the special gift; *that* he cannot acquire any more than people unendowed with the necessary gifts can expect to become painters or sculptors; but supposing him to have by nature the art faculty, by the exercise of very ordinary industry and study he can with certainty attain to excellence in what we maintain to be an equally necessary part of his work—namely, skill in purely practical details of construction and arrangement. . . We maintain that, in a complex art like architecture, a full knowledge of materials used in carrying out work and of all modes of construction is absolutely necessary; it is a mere waste of time to dwell incessantly and almost exclusively on one part of our work only, for without this knowledge an architect cannot claim to be an architect at all—he would be the merest amateur. Nay, more, we hold that no good architecture ever did exist, or ever can exist, apart from sound construction; good construction always has, and always must, go more to influence design than anything else; in short, it is the root and foundation of the whole art, from which all styles and all modes of good building have always sprung."

Mr. W. H. Seth-Smith, in proposing a vote of thanks to the lecturer, said the paper, on a subject in which he took a great interest, was very comprehensive and was full of truths very well expressed and very well read. What did it all come to? This, he thought: They must, if they were ever to inspire the public with a knowledge that architects were members of a profession and were worthy of employment, show that they knew their work thoroughly. It was most desirable that architects should be trained men, and that that training should be both practical and artistic. He did not intend to discuss what that training should be; he thought they could safely leave that to the authority which the Institute was endeavouring to create, which would be thoroughly representative and highly qualified for educational advice. That body might advise a combined scientific and artistic training, but in any case science and art must not be divorced in any system adopted. They must feel that it was absolutely essential to keep the training of architects—and the examination, too, for he believed that examinations were the only way of testing whether a man had had any training—in the hands of the profession of practising architects; that any curricula which might be laid down should be drawn up by architects. The Association was an excellent training school, and the Institute should be an excellent examining body—certainly the only body they could expect to do the work in the best way it could be done. The Institute's present examination might not be perfect—but he must not go into that When this board of education got to work it must lay down the best system—whether the system was to be more academic or more practical, or a combination of the two, must be left to it. He was glad to hear Mr. Adams say that what was wanted was more brains. It seemed to have been the belief in certain directions that an artist did not need brains; that somehow an artist could do his work without; but the truth was that in no work or profession did men need brains more. Without brains and culture they could not properly embark on their training as architects; and that seemed to be one of the leading points in the Association, for they believed that in the Day School they could give a man a chance of deciding whether he had the capacity for learning his art.

Mr. W. D. Caröe, in seconding the vote of thanks, said he thoroughly agreed with Mr. Seth-Smith as to the fulness of the paper—in fact, he did not know of any subject of architectural education which Mr. Adams had not touched upon. There was reading for hours in the paper, and there were texts for innumerable sermons, and as he had not previously read the paper he felt unable adequately to discuss it. There was one point he could remark on; not only in the paper, but in the drawings on the walls there was some absence of what he might call plan. In his opinion, the beginning of great architecture, so far as one knew it in these complicated days, and so far as we had to practise it, existed in plan, and, as was shown in Mr. Adams's last quotation, we could not even be artistic unless we planned in an artistic and convenient way. He would have liked to have seen on the walls a few more plans, and to have heard Mr. Adams impress on them a little more than he had done, the advantage and necessity of planning as a foundation of great design. That, no doubt, was one of the matters which, perhaps, could hardly be learnt; it must be inborn, and it separated the sheep from the goats to a large extent. There was another point, which Mr. Adams had mentioned, which he (the speaker) would like to emphasise, and that was the extreme importance, in these days of easy transit, of not misusing materials. In various districts we saw springing up around us an enormous amount of building, not only in the towns but in country places—in little country villages, where one would hardly have expected it—cottages, schools, institutes, etc., were being erected, and it was nearly always the case, he was sorry to say, that the material used was one that belonged to another part of the country. He wished, therefore, to impress on the growing generation of architects that there was nothing more important than to use the materials at hand, and to forget, so far as architectural matters were concerned, that railways existed at all. If that were done, and if materials were used in the spirit of the neighbourhood where they were found, they need not be afraid of modern architecture spoiling a neighbourhood, and they might even welcome the modern garden city. He wished to refer to the excellent words Mr. Adams used on the general subject of education, and especially on the subject of registration. He (the speaker) did not intend to enter on that knotty subject in any polemical spirit, but he must say that, in the making of architects, if there were two fallacies they existed—he was sorry to disagree with Mr. Seth-Smith—in the two words registration and examination. In nearly all the bodies which controlled the professions—it was certainly the case, also, in the Universities—there was a general uprising, he would call it, against an abject system of examination as a test of knowledge, and he believed that one of the causes of the success of the Architectural Association was largely due to this, i.e., that in the past they had eschewed examinations; and he hoped they would always do so, because he was sure that examination, especially when it touched on anything in which the imagination was concerned, was an absolute mistake. A man's imagination or depth of thought could not be examined.

Mr. Walter Millard said it was impossible to discuss the paper in a short time. As to the title of the paper, he was inclined to think that the making of architects was a branch of the business of the making of men. In all professions men had to be trained and brought out—made the most of; and in the making of architects that had to take place. As they grew up they were more inclined to take long and broad views of how architects should be trained, but it would not do for those who had had a few years' experience to forget the student's point of view. It was well for them to go back to the time when they were students, and remember what they themselves thought about their training. The student took short views; he did not look far ahead—just a year or two—but what he thought was worth consideration when they were planning grand schemes for educating the whole profession. What the student cared about was not the general effect upon the profession as a whole, or anything of that sort. The utmost even a fairly good man wanted was to learn—not necessarily for the mere love of learning, but so that he could turn that learning to account. Probably the student wanted to get into a good office—that was one of the early desires of a young student, and he wanted to be told how to do things and learn things, because that would help him immediately—for one thing, help him to get a good berth, where he could work alongside of good men who did good work. Even if a man had no ambition of this kind, he wanted to be helped to get a good salary—though "good" in this case did not, perhaps, mean more than 30s. per week. These were some of the immediate objects of students, and more would be done with those students if they were helped in their objects and aims. If they wanted the student to wish and seek for something more, they must help him first to realise his immediate wishes. Help him in his aims, and you may be privileged to lead him to higher aims. When a student was in an office, what could be done to help him get into a better one? One thing was to teach him to draw, and so make himself useful to someone else. Another thing they could do was in the way of offering of prizes. There were many prizes offered to students, but there were not enough, and he would like architectural students to have a chance such as students for the Bar had, i.e., to win a studentship that would secure a premium to be paid to the principal of an office selected by the student himself. Studentships were offered in the case of the Bar which entitled the winners to have the value of the studentship paid to any barrister he might wish to read with. In the case of the architectural profession more than one studentship of the kind would be necessary—perhaps a dozen would be required; and if there were these prizes there would be something for a student to aim at, and that would help him a good deal. All the students who might compete would not be successful, but that would not matter, for those who tried would be benefited. It was an excellent thing to be with and to work alongside good men; and though that could be obtained now in the Royal Academy schools, that was only evening work. If a student got into an office where there were picked men it made a difference to his whole life, and if he had that object and chance in early life his aims were different from what they might otherwise have been. It was most desirable to get hold of students early in life, for it was little use thinking of what could be done with a student later on in life unless they could influence him in his early student days. It was necessary to make a man grow, and many men missed finding out what they were really capable of because they were left too long to themselves. If a man were studying architecture in order to become an architect, it was no use for that man to think that he could confine his work and studies to office hours, or to the mere reading of books after office hours. His idea of the method of study of an architectural student was a parallel of the method of study of the medical student. Let them ask any medical student where he would be if he tried to study anatomy from books and diagrams only, and did not dissect. The first thing an architectural student should be set to do, it seemed to him, was to study a building—not merely the drawing of a building, but an actual building; as simple a building as they liked and of any period—and to thoroughly study and understand it, as no amateur could; and not merely to photograph it, as any amateur could, but to get hold of it, as an architect should, by measuring it, drawing it to scale, and by examining it in every way inside and outside, and learning all there was to be learnt about it. In that way a student would get a method of study applicable to all buildings of all styles and all periods. Whether the student had any preference for buildings of one period rather than another was a secondary matter, for he would have learnt how to study a building as a building, to dissect and analyse it for himself. That should be the method from the first, as soon as a student had learnt to make a geometrical drawing and to understand what was meant by plan, section, and elevation. That, of course, would lead on in later times to studying buildings of particular times and periods. It had been suggested to him, within the last day or two, that some of the Academy, the Institute, and the Association competitions might be made more use of if the winners of the prizes were set to do a certain series of buildings, and in such a way that they would be useful as records and studies; and that the whole country might be mapped out and an archæological survey of buildings be made by degrees. He wished to endorse what Mr. Seth-Smith had said in one respect: Architects should keep in their own hands the training of their own recruits for the profession. The question of recruiting was a vital one to any profession—upon what recruits were enlisted and upon their subsequent training—and he hoped that it would never get out of architects' hands into the hands of others—the Government or rate-supported authorities. Architects should see to the training of pupils, for none but architects knew how to produce architects. Each profession ought to be responsible for the training of its own recruits, and the

architectural profession had hardly yet risen to a full conception of their collective responsibility for the education and development of the rising generation.

Professor Simpson, in supporting the vote of thanks, said there was so little time left for the purpose of discussion that he would not make many remarks. Mr. Adams had said that a school should be an "occupation" school, which he (the speaker) took to mean that the school should be such as could train a student for the occupation which he was to follow—in other words, that the school should be essentially practical. That, he took it, was the thing to bear in mind in any scheme of preliminary education which was started. Whatever was done must be on practical lines, and be such as was suited to the conditions of everyday life, to the work we are called upon to do now, and that it must not in any way attempt to revive methods of teaching which some hundred years ago were satisfactory, but which were satisfactory under the then conditions, which had since totally changed. Any scheme of education to be practical must be broad and liberal—broad in the sense that it should include practically everything that a student required to know. That was rather a large order; he meant that, as far as it was possible, it should be based on those lines. It was curious how fashion changed. It was not so long ago since it was stated that the first essential for an architect was drawing, the second was drawing, and the third was drawing. Nowadays they were told by some that the first essential was building construction, and the second and third were the same. No doubt building construction was the first essential for an architect; at the same time drawing came second—and when he said drawing he meant drawing, and not draughtsmanship, which was a different thing altogether. The training of the student's hand and eye by means of hard and systematic drawing—from the antique, the life, etc.—enabled him afterwards to express his ideas without being hindered by want of technical ability. Although he said building construction came first and drawing second, still, the first essential for an architect was imagination. An architect needed imagination to conceive; then he needed a knowledge of building construction in order to carry out his ideas, and a knowledge of drawing in order to express them properly.

The Chairman, in putting the vote of thanks to the meeting, said they had had a very interesting paper, and he thought they would go away with more ideas than they came with. Not only had Mr. Adams told them what they should do, but he had told them a good many things they ought not to do. He desired to say how much the Association was indebted to Mr. Adams for what he had done in connexion with the transfer of the Architectural Museum in Tufton-street to the Association, and no one who had not been on the committee of the Association or the Museum could realise how much Mr. Adams had done for the Association in the matter.

The vote of thanks having been heartily agreed to,

Mr. Maurice Adams, in reply, said that if one young student went away impressed by the necessity that he individually was the person that was going to make himself a success, anything he (the speaker) had said would not have been in vain. It was little use a student depending upon other people. How could half, or a quarter, or an appreciative number of young fellows who entered the profession ever hope to get into a leading architect's office? Only a very few could hope to be so fortunate; and, strange to say, the best men—very often the most successful men—came up from the country, where they hardly had any advantages at all. It was not so much the number of advantages a man had, but the way he made use of those he possessed. He feared he had made his paper rather long, but he thought it was an opportunity he might not have again for furthering the object he had in view when he assisted in giving over the Architectural Museum to the Association, and he wanted to make the movement, which they were now occupied in, as thorough and as far-reaching as possible. He entirely appreciated what Mr. Caröe had said as to plans; no building could be a success which was not well planned. In conclusion he desired to move a hearty vote of thanks to those to whom he was personally largely indebted for lending drawings for the occasion. He never saw a better set of drawings, and they were deeply obliged to the owners for lending such drawings, many of which were of great value, as illustrating works in progress. Those drawings had largely contributed to the success of the evening.

The vote of thanks having been very cordially agreed to,

The Chairman announced that the next meeting will be held on February 5, when Mr. W. A. Harvey will read a paper on "Cottage Homes."

The meeting then terminated.

THE ARCHITECTURAL ASSOCIATION SPRING VISITS:

I.—ROYAL FRIENDLY SOCIETIES' BUILDINGS, FINSBURY SQUARE.

IN thick foggy weather the first spring visit of the current session was held on Saturday, January 23, at the new buildings of the Royal Friendly Societies in Finsbury-square. Although the premises are yet enveloped in scaffolding, the members of the party, numbering about fifty, had a good opportunity of closely examining the Portland stone and Cornish granite materials which are being used in the façades. Mr. John Belcher, the architect, telegraphed his regret at being unable to be present, but hoped to welcome the members of the Association upon a future and more suitable occasion. In his absence Mr. A. H. Belcher conducted the party to the various parts of the building and explained the plans.

In our issue of May 16, 1903, we published a perspective view and plan of the design, together with a reference to the purposes to which the buildings will be put. In the immediate neighbourhood there is another large new building—Electra House, views of which we recently gave in our New Year number—which is the work of Mr. John Belcher, and offers some comparison with the structure now under consideration. The materials used in the fronts of both works are identical; but whereas granite is employed in one story only of the older building, two stories at least above the street level will be built of that material in the Royal Friendly Societies' head offices. The premises now in course of erection occupy a corner site. The dominant feature will be obtained from the important treatment of the angle, which rises into a kind of octagonal tower; the principal front, however, will face Finsbury-square, where the Board Room and more important departments of the offices of the Societies will be located. The City-road elevation will be made somewhat irregular, owing to the compulsory setting back of the various stages on the north boundary to avoid infringement of the adjoining rights of light.

The new fronts have not reached their full heights, so that the day of the visit was too early to obtain impressions of the final effects. It was pointed out that asphalte roofs will be used, and that an important part of them will be finished with vulcanite, upon which will be laid out a roof garden for the use of the staff in the Societies' offices. A recreation room will also be provided. Shepwood patent bricks, both for plastering upon and for glazed finishes, are being largely used in the construction of the office partitions.

THE SURVEYORS' INSTITUTION:

GARDEN CITIES.

AN ordinary general meeting of the Surveyors' Institution was held on Monday at No. 12, Great George-street, Westminster, Mr. A. Buck, President, in the chair.

Mr. Rogers, Secretary, having read the minutes of the last meeting, which were confirmed,

Mr. Percivall Currey, Hon. Secretary, announced some donations to the Library and the Library Fund. A vote of thanks having been accorded to the donors,

The Chairman said that Mr. Ralph Neville, K.C., had prepared a paper entitled "Garden Cities as a Method of Industrial Distribution," but he was not well enough to be present to read it himself. The paper, therefore, would be read by the Secretary.

Mr. Rogers then read the paper, which dealt with the objects of the directors of the First Garden City, Limited, the name and idea for which were due to Mr. Ebenezer Howard, the author of a recent book on the subject. The scheme simply aims at stimulating and organising the movement towards the decentralisation of manufacturing industry which is observable in various quarters. The endeavour was to facilitate the distribution of the industrial population upon the land, and the action of the Association was prompted by the belief that physical degeneration among the population of our great towns must be recognised as an existing and pressing evil. He thought that this degeneration was so generally recognised that he might fairly proceed on the assumption that it exists, and he thought that there was a consensus of opinion that the progress of physical degeneration was identified with the increase of the population of the towns and the decrease of the population of the country, but as to the determining causes, which made town life unhealthy and country life healthy, there seemed to be, strangely enough, a divergence of opinion. Medical opinion was tardily beginning to lay hold of this vital fact that, no matter how satisfactory the conditions of life might be in other respects, it was absolutely impossible to rear and maintain a healthy race without an abundance of fresh air. It was not pretended that when we have provided a sufficiency of fresh air we have done all that is necessary. Some day we shall recognise the truth, which the Germans, in search of an object quite different, stumbled upon, *i.e.*, the effect upon national physique of sound physical training at the critical period of the lives of their young men. He did not despair of seeing a similar opportunity extended to our own boys.

Now, if physical degeneration exists, and we were agreed that steps should be taken to arrest it, what was precisely the problem we have to solve? He assumed at the outset a consensus of opinion identifying the growth of the towns and the depopulation of the country with the advance of deterioration. He had endeavoured to lead to the conclusion that the determining cause (or at all events that which transcends all others) was the insufficiency of fresh air in overcrowded towns. If this be conceded, it followed that either the towns must be so modified as to provide a sufficiency of air for the working class inhabiting them, or some means must be found of withdrawing part of the population to the country.

And first, with regard to the practicability of converting our great towns into places suitable for the rearing and maintenance of a healthy race. He would summarise the more important difficulties in the way. First, the cost was almost prohibitive; then, if that be overcome, the necessity arose of either heaping the working class in tenement buildings or scattering them far from their work. Mr. Scoble, in a paper recently read before the Institution,* had done well in calling attention to the mischief flowing from the adoption of the tenement system. A very large proportion of the tenements must inevitably be deficient in light and air, and in many of them artificial light was in constant use; but their chief defect lay in the tendency to keep the children within four walls and out of the open air. The tenements were very inaccessible from the street, or perhaps it would be better to say the street was very inaccessible from the tenements. Now we speak, partly sympathetically and partly reproachfully, of "gutter children"; but it was a mistake to suppose that their connexion with the gutter was the chief ground for commiserating their lot. On the contrary, when seen in the gutter, these children, sad as it was to say so, were enjoying the principal opportunity they possess for securing healthy development. The board school playgrounds should perhaps be mentioned, but he doubted if hygienically they were any better. With regard to the other alternative, distribution in suburbs, inasmuch as it was difficult to make factory work healthy, particularly in towns, what should be aimed at was, by securing healthy conditions of life during leisure hours, to counteract any deteriorating effects which might prove inseparable from work in the factory and workshop. Long journeys to and from work were not only exhausting, but were almost invariably performed under conditions quite as unfavourable to health as those which obtain in the ordinary workshop. What a man wanted to enable him to make the most of his life was to be close to his work and close to his opportunities for play or relaxation. Every possible inducement should be held out to the working man to spend the hours which were not devoted to indoor labour

* See our issue for November 28 last.

in some pursuit which takes him into the open air. Another point to be borne in mind was this. Large aggregations of inhabited dwellings undoubtedly affect the atmosphere in a manner prejudicial to health. If we took a man from the centre of London, and put him upon the Surrey Hills or Sussex Downs, he was immediately sensible of an alteration in his physical condition. Now, the more we clear the centre of our great towns, and distribute the population in suburbs, the further and further off we drive the country, and the wider and wider becomes the thickly inhabited area. It therefore by no means necessarily followed that by spreading it out over a wider area we improved the hygienic conditions of the town as a whole. So far, therefore, Mr. Scoble and the promoters of the Garden City project travelled along the same lines, and arrived at the same conclusion, namely, that the distribution of industries in the country was the true solution of the problem of overcrowding and physical deterioration. When we came, however, to the question of what, if anything, should be done for the purpose of promoting such distribution they parted company.

The author then referred in some detail to the Garden City project, mentioning that the total amount of money found up to the present time was some 85,000*l*. To Mr. Howard belonged the merit of directing public attention to the desirability and possibility of making provision for the increase and overflow of the industrial population by:—(1) Acquiring sites for industrial settlements at agricultural prices; (2) Scientific planning of the sites by experts; (3) Concerted migration of population; (4) Limiting the area and population of these settlements; (5) Maintaining a belt of agricultural land around them; (6) Applying the increment in the value of the land for the benefit of the population. Here began and ended the connexion between Mr. Howard's book and the undertaking of the First Garden City, Limited. Mr. Howard provided his central idea with an attractive setting; with this the Company had no concern. Some of this might prove capable of realisation, some of it was very possibly fanciful, but the whole of it was expressly stated by him to be suggestive merely, and in his book he expressly said the final and actual scheme would be the outcome of many minds. The purpose of the Company was to proceed with the development of the estate in accordance with the best expert advice they could obtain, having regard only to the objects enumerated above. This was the attitude of the directors to-day. This has been the attitude of those engaged in the movement ever since he (the author) had been connected with it, and, to the best of his belief, it was the same from the very inception of the movement. Some of the advantages which might be expected to accrue from industrial settlements so organised were:—

1. Conditions of life for the artisan and townsman consistent with sound health for himself, his wife, and his children.
2. Cheapness, efficiency, and sightliness resulting from the scientific laying out of the town as a whole from the outset. In connexion with this head may be grouped:
   (*a*) The supply of light, water, power, and heat;
   (*b*) Facility of transit and communication;
   (*c*) Disposal of sewage.
3. The reduction of rates, by the application of the increment in the value of the lands, so far as it can be secured for the benefit of the inhabitants.
4. Bringing a market to the farmers of the agricultural land, and incidentally
   (*a*) Increasing the amount of labour employed upon the land by the extension of small culture;
   (*b*) Affording the agricultural labourer the advantages of town life.

If this scheme of industrial distribution were progressively acted upon, it seemed to him that the location of the population upon the land would have been started on the right lines. It would increase the value of land over a wide area, would maintain a greater number, probably double the number, of agricultural labourers, and would afford conditions of healthy existence to the industrial workmen. We speak of the over-population of England. The land would bear in health and comfort a far larger population than it holds to-day if the population were distributed in this fashion. The progressive depopulation of the country had long been bewailed. Numerous expedients had been suggested to check it, varying from the provision of travelling circuses to the imposition of protective duties; but in his judgment any attempt to force back the people from industry to agriculture by artificial means was foredoomed to failure. The tide of civilisation flowed in the same direction in all advanced countries.

The author then criticised at some length some of Mr. Scoble's conclusions. He agreed in the view that certain trades would be more and more drawn into the country, but he could not think the sporadic settlement of manufacturers was the true solution of the industrial question. There was no business in which co-operation offered so fair a field as it did in land settlement and the formation of towns. In this case there arose an advantage from the collective conduct of business, apart from that due to the conduct of the several businesses themselves. The mere resort of people to the same place, whether it be for the purpose of residence or of business, whether it be by individual selection or collective design, added a value to the land beyond its intrinsic worth. This increment had hitherto been uniformly presented to the landowner. By foresight and concerted action, it could be secured in great part, if not altogether, for the benefit of the people who create it. Moreover, in existing towns the inhabitants were in several ways exploited by private monopolists. Assuming management to be efficient in a town designed and managed in the interests of manufacture, where the return on capital was limited, as in the present case to 5 per cent., there must be an opportunity for a reduction of cost, which would place the manufacturer in a favourable position, not only in comparison with his rivals in great towns, but with those who had selected isolated sites for themselves in the country or near small towns. With regard to labour, too, and accommodation for labour, the advantages of co-operation and concerted action were distinct. The manufacturers to whom expenditure outside their business was immaterial were comparatively few. Certainly many of those who would be glad to move into the country were not prepared to build model villages or even themselves to provide accommodation for their work-people. Now, it was not easy to get builders to build cottages, the occupation of which depended exclusively upon the prosperity of a particular factory; whereas, where even a few manufacturers start together with the probability of an increase in their numbers, he did not think any very great difficulty would be found in procuring the erection of cottages, particularly where the landowner undertakes the capital expenditure with regard to sewering and road-making. Again, there was, he believed, always a difficulty about labour where local industries provide employment for men only. In the creation of Barrow-in-Furness it was found necessary, he had been told, to provide supplemental industries for the employment of women. On the whole, it was to be observed that the history of industry under the factory system indicated that towns were *prima facie* advantageous. It was only since the overcrowding of towns that the disadvantages had begun to predominate. The Garden City believed that they could offer land to the manufacturer upon terms which, having regard to the advantages offered, would be better than any which he could obtain from a private owner.

The history of industrial development in its effect upon the distribution of the population upon the land, did not teach the desirability in the case of a new departure, of leaving matters to self-interest and individual effort alone without foresight, co-operation, or organisation. If the development of the movement of decentralisation was left to chance, as the prime movement of centralisation under the factory system was left, we might anticipate with some confidence the growth of evils not less serious than those which the short-sighted indifference of our predecessors compelled us to cope with to-day. To the advantage of individualist effort he was quite alive, but the idea that this excluded the necessity for reasonable co-operation and organisation, he ventured to call individualism gone mad.

In regard to the site itself and its development, it was an estate of 3,800 acres, near Hitchin, on the Great Northern Railway. With regard to the area of the site, experience must show what was the right proportion which agricultural should bear to town land. In this regard it must be remembered that if the completed idea of a group of towns built on the like principle were carried into effect, the width of the agricultural belt surrounding each would be doubled. Personally, he should have preferred 6,000 acres, as originally suggested, but there is an old proverb that you must cut your coat according to your cloth. It was, of course, impossible that one site should afford equal facilities for all kinds of manufactures, but the company were advised that for general purposes the site was an admirable one. The preliminary work had been proved by experience to be much greater than one would have anticipated, but they had now every reason to believe that in a very short time they would be in a position to make a substantial start in the business of development. In regard to the question of the density of the population, it seemed to him that this might very fairly exceed what was to be found in a model village. The retention of two-thirds to three-quarters of the surrounding land unbuilt upon, would justify the erection of a fairly compact town, and compactness had of course its advantages, although everything must give way to sound hygienic conditions. There might be some temptation to create a straggling village, rather than a town; and by aiming to provide as much space round each dwelling as in a model village, and as many open spaces as in a model town, in addition to the open belt surrounding the town, they might provide several times over for the same thing. He thought, however, that the architects and others engaged upon the plans were fully alive to this danger, and he doubted not they would escape the Scylla of extravagant extension without falling into the Charybdis of overcrowding. With regard to land tenure, it was desired to depart as little as might be from conventional terms, the directors' duty to their shareholders and the inhabitants alike being to dispose of the building sites to the best advantage.

There was a point in connexion with the Garden City which should not be overlooked, and it was this: All that the company could in the first instance attempt was to provide for the laying out and creation of a town in accordance with the best conditions known to modern science; but there was ample scope for subsidiary effort to ameliorate the conditions of civic life. For such effort an exceptional opportunity was presented. From the very nature of the endeavour, a very much larger proportion of the inhabitants would consist of persons sincerely interested in municipal progress than could be found in other societies. He was fully aware that this was not without its dangerous side, but he trusted he should not be thought too sanguine when he said that the constitution of the board afforded a substantial guarantee against the undue influence of fads and fancies. The promoters of all reasonable schemes of social welfare, be they for model dwellings, workmen's clubs, co-operative enterprises, or what not, might be sure of sympathy and assistance from the company. The enthusiasm worked by a forward movement like the present was a great motive power, the effect of which could not, of course, be measured beforehand; but he should be much disappointed if the Garden City movement did not exert a great moral force and lead to considerable social improvement above and beyond hygienic questions, important and essential though they be.

Mr. Howard Martin, in proposing a vote of thanks to the author of the paper, said there could be no two opinions about the importance of the subject. From a London point of view, it was extremely important that we should diminish the constantly increasing pressure of immigration into London by inducing workers to carry on their occupations in the country, not only in order to stop the physical deterioration of the people, but in order to get land on which to build proper houses and factories at a cost which would not be prohibitive. He thought the ideal state of affairs was for London to become a distributing centre, and for most of the manufactories to be carried on in the country. One result of that would be that more people would be willing to employ themselves on the land. It was said that one reason why people came to the towns was the dulness of the country life; houses were bad and were distant from work, and the workers were willing to put up with the overcrowding, etc., of the towns in order to escape from the dulness of the country. If rural centres of work could

be established, town workers would be brought under conditions which they preferred, but which were more healthy in every way. It was desirable to get more people to work out of doors, for it was that sort of life that made a healthy and a vigorous race. He thought Mr. Neville's paper would convince them as to the desirability of the scheme, but if there were doubts they would be as to the mode of carrying it out. He thought there would not be much difficulty as to the mode of disposing of sewage and as to lighting; such matters could be settled far more easily in a new town than in an old town, where there were all sorts of conflicting interests to consider. The great difficulty the promoters of this admirable scheme would have to contend with was in inducing individual manufacturers to move their capital and works, and transfer their labour soon enough to make the movement a success.

Mr. Wheeler, K.C., seconded the vote of thanks, and referred to the question of physical degeneration of large masses of the people, which was the most pressing question of the time. In Lancashire, the greatest manufacturing county in England, 49 per cent. of the class from which our soldiers were drawn were useless as soldiers. He did not agree with the author as to the unhealthiness of town life, except in crowded areas. The population of London for the whole area was actually sparse, *i.e.*, fifteen to the acre, and the death rate for the whole area was twelve or thirteen per thousand. That would compare favourably with any village in England. But these conditions varied greatly. The death rate of his own particular district was under ten per thousand, but within two miles of that area was an area where the death rate was over fifty per thousand. In his opinion this was due to the habits of the people. The housing question was only one phase of the matter. It was not merely a question of insanitation, it was also a question of the unwholesome habits of the people. The tenement system, on the whole, had been admirable, and the death rate, generally speaking, was a favourable one—distinctly good, when compared with the streets immediately contiguous. There were considerable drawbacks to tenements, but on the whole they were healthy, and so he was not altogether able to agree with Mr. Neville. He did agree with the author, however, in what he said about the undesirability of working people travelling long distances to their work; that did not conduce to physical improvement. In the garden cities factories would be close at hand, and that would be an advantage. As to sewage disposal, that would depend to a large extent on the local authorities, and they might insist on conditions which might add enormously to the cost of erecting the buildings in Garden City.

Mr. Ebenezer Howard said that in considering the health of a people they ought not merely to look at death rates. Were they not delusive? Might there not be a very low death rate accompanied by a very low standard of life? Was there not a great deal in what had been said about the survival of the unfit? In comparing town life with country life we had to remember that country life itself was often not nearly so healthy as it might be, because there were often not sufficient people in a particular district to make it feasible or possible to provide better sanitary conditions. Mr. Howard then described in some detail the Garden City project at Hitchin. The subsoil, he said, is chalk, and the upper soil is sandy loam. There is a good deal of sand on the estate; there is gravel, and in some parts a considerable amount of clay, and they had made some very good bricks, and hoped to make more. The estate was within the area of a profitable motor-car service. As to a water supply, their engineer had advised them that they would have a plentiful supply, as was proved by the bore holes that had been made. As to sewage disposal, no system had been settled on, but it was quite possible that at first some system of earth closets would be adopted; there was no difficulty under the Hitchin by-laws as to that. They had decided to have a system of gas-lighting, and a small gas-works would be started on the estate. They were very sanguine about getting manufacturers to bring their factories to the estate; several manufacturers were greatly interested in the scheme, and there was not the least doubt that a great many would take part in the scheme.

On the motion of Mr. Eve, seconded by Mr. Woodward, the discussion was adjourned, and the meeting terminated.

Examination Results.

Of the candidates who presented themselves at the Preliminary Examination of the Institution, held concurrently in London, Manchester, and Glasgow, on January 13 and 14, the following satisfied the Examiners:—H. G. Angell, Guildford; J. W. Balden, Dewsbury; H. C. H. Barnes, Wemyss Bay, N.B.; R. S. Bartram, Tonbridge; G. C. Baxter, Old Jewry, E.C.; E. G. Bigwood, Barnt Green, near Birmingham; A. G. Blackford, Ealing, W.; G. L. Broad, Lewes; C. G. Brown, Harefield, Middlesex; H. H. Buckmaster, Sloane-street, S.W.; W. G. Bulteel, St. Austell, Cornwall; F. C. Burbidge, Southsea; T. L. Butler, Weybridge; W. B. L. Butlin, Leamington; P. S. Byshe, Lewes; C. B. Callander, Warwick; G. S. Callf, West Ealing, W.; J. E. Carter, Brixton, S.W.; A. G. Carver, Upper Tooting, S.W.; L. E. Clark, Bromley; R. M. Clark, Dover; G. S. Conway, Gateshead-on-Tyne; G. Cook, Lye, near Stourbridge; J. R. Creasey, jun., Sidcup; S. G. Crockwell, Torquay; F. L. Crow, jun., Leigh, near Reigate; W. R. Darby, Notting Hill, W.; J. R. Day, Walthamstow, E.; M. Dixon, Lynsted, near Sittingbourne; J. D. Drew, Starcross; W. Durbridge, Bromley; G. P. Egan, Weston-super-Mare; F. L. Elmes, Canterbury; C. England, Bournemouth; R. T. Farmer, Chatham; H. F. Finn-Kelcey, Ashford; G. S. Ford, Melton Mowbray; R. E. Ford, Swindon; F. A. Fowler, Clapham, S.W.; A. W. Fox, Atherstone; B. Francis, Southend-on-Sea; B. K. Garvice, Bideford; W. Godfrey-Payton, Warwick; E. J. Goodacre, Hinckley; L. M. Grover, Camberley; H. L. Gudgeon, Tunbridge Wells; L. B. Gumbrell, Kingston-on-Thames; J. W. Haynes, Brighton; S. H. Heath, Westcombe Park, S.E.; C. M. Hennell, Kensington, W.; A. L. Hicks, Egham; C. F. Hodding, Salisbury; C. B. Holland, Bourne; H. A. Hosking, St. Germans; J. H. Hughes, Shortlands; E. C. Ingram, Sturminster Newton; G. M. Jeans, Milton, Marlborough; A. D. Jones, Chorlton-cum-Hardy; E. W. Kemp, Cambridge; H. B. Kennard, New Eltham; J. L. King, Stamford; S. King, Chatham; S. N. List, Croydon; A. E. Littler, Prescot; D. Llewellyn, Neath; V. F. Locke, Wolverhampton; H. V. Love, Southsea; H. V. Lynam, Newcastle, Staffordshire; F. M. Martin, Gravesend; P. Messenger, Guildford; L. P. Miles, Shortlands; P. C. Miller, Hoylake; F. J. Mills, Cheriton; C. Milnes, Birkenhead; E. W. Morgan, East Ham; H. R. Morris, Oxford; H. E. Noel, Ockham; H. C. Nutter, Cowden; T. A. R. Owen, Seaforth; G. H. Patey, Hampstead, N.W.; C. S. Patterson, Blundellsands; D. D. Pearch, Hastings; B. C. Pemberton, Rickmansworth; R. A. Purnell, Cheltenham; S. H. Ramsay, Herne Bay; W. L. Raymond, Child's Hill, N.W.; G. N. Reeve, Croydon; F. W. Robinson, Richmond; S. W. Ross, St. Albans; B. R. Sandwith, Reading; W. I. Shearburn, Dorking; G. G. Shone, Peterborough; W. Shovelton, Manchester; T. H. G. Stamper, Clapham Common, S.W.; H. S. Stevens, Colchester; S. H. *Stohwasser, West Hampstead, N.W.; J. H. Taylor, Hanwell; H. E. Turner, Ashton-under-Lyne; L. G. S. Ullyett, Leytonstone, N.E.; J. W. Vigars, Brecon; J. G. C. Wales, Portman-square, W.; W. Walkden, Alderley Edge; C. G. R. Weller, Crewkerne; W. A. Williams, Bath; A. S. Willmott, Ealing, W.; W. C. Wise, West Dulwich, S.E.; H. A. Wright, Warwick; and W. N. Wright, Woodford.

* Passed at head of the list.

ARCHITECTURAL SOCIETIES.

EDINBURGH ARCHITECTURAL ASSOCIATION.—A meeting of the Edinburgh Architectural Association was held on the 20th inst. in the Association Rooms, 117, George-street, Mr. A. Hunter Crawford, the President of the Association, presiding. The Chairman, in reporting upon a recent discussion at the R.I.B.A. on "The Statutory Registration of Architects," said he was sorry to observe that there was an inclination to take it for granted that they were all in favour of the movement. The best argument put forward in support of the proposal was that if there was a set of examinations it would necessitate everyone passing these examinations before being registered, whereas at present there are only the Institute examinations, which are of a more or less voluntary character. It was agreed that a Council Meeting be called for the purpose of considering the proposal. Referring to the question of public officials carrying out important architectural work, the Chairman said the case of the Usher Hall had aroused a good deal of feeling among the members of the Association, and the general question had been brought up at the last Council Meeting, when a committee was appointed to inquire into the matter and report. It was a thing they ought to put a stop to if possible. The Convener of the Special Committee had sent him a series of questions, and he (the Chairman) would be glad to have the assistance of one or two of the members in drafting replies. After the business had been transacted, Mr. W. Crum Watson, architect, gave a lecture entitled "An Architect's Holiday in Portugal." He commenced by making a brief survey of the history of architecture in Portugal. The earlier buildings in the country, he explained, were either from ideas brought from Galicia, or, as was the case at Alcobaça, designed on styles brought by the monks from France. In the early part of the XVIth century the Portuguese prosperity, resulting chiefly from the Indian conquests, brought about many notable additions to the architecture of the country, and the King added largely to Batalha, Thomar, and other places. At Belem, near Lisbon, Portuguese architecture reached the stage of its greatest elaborateness and richness, but after the Spanish Conquest in 1580 very little of any consequence was built. Mr. Watson afterwards described many of the principal buildings in the country, showing that much was borrowed from other countries, including India, and that in originality the tendency was towards somewhat extraordinary combinations. The lecture was illustrated by a large number of lantern slides, which showed the architectural features with great distinctness, and the majority of which had been made from photographs taken by Mr. Watson.

WOLVERHAMPTON AND DISTRICT ARCHITECTURAL ASSOCIATION.—The annual meeting of this Association was held recently at the Law Library, Lich-gates. After the business of the meeting the following officers were elected for the ensuing year:—President, Mr. F. T. Beck; Vice-President, Mr. W. Edwards; Council, Mr. S. H. Eachus, Mr. J. Lavender, F.R.I.B.A., and Mr. G. H. Stanger, F.R.I.B.A.; Hon. Treasurer, Mr. J. Harrison Weller; Hon. Secretary, Mr. W. J. Oliver, 1, Darlington-street, Wolverhampton; Hon. Auditor, Mr. A. Eaton Painter. The retiring President, Mr. G. H. Stanger, gave an address, reviewing the work of the Association during the past year. After the meeting, on the invitation of the retiring President and Vice-President, the members adjourned to the Star and Garter Hotel for dinner.

ARCHÆOLOGICAL SOCIETIES.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—A meeting was held at 32, Sackville-street, on the 20th inst., Dr. M. de Gray Birch, F.S.A., in the chair. Some curious books were exhibited by Mrs. Collier, including a small book of emblems, "Typus Mundi," by John Cnobbarum, published at Antwerp in 1627. The illustrations are very quaint. "A Papist misrepresented and represented; or a two fold character of Popery," 1685; and a small copy of Milton's "Paradise Lost," 1711. Mr. Andrew Oliver exhibited some excellent photographs of an ancient font, unfinished, discovered buried under the flooring of the nave of St. Staughton's Church, Hunts. The Rev. H. J. Dukinfield Astley, Hon. Editorial Secretary, read a paper he had prepared entitled, "Portuguese Parallels to the Clydeside Discoveries," in which he dealt at considerable length with the very curious and puzzling discoveries made during the past year by Father José Brenha and Father Rodriguez among the groups of dolmens situated at Pouca d'Aguiar, Traz os Montes, Portugal. In 1894 the attention of Father Brenha was first directed to the examination of these dolmens, and he has, in company with Father Rodriguez, since systematically explored them. The whole province of Traz os Montes abounds in dolmens, situated for the most part high up in the mountains, the great number of them in a relatively small district, testifying, in Father Brenha's opinion, to the density of the population and its persistence in Neolithic times. These strange discoveries consist of amulets of stone, pierced for suspension, bearing cap and ring marks and ducts, which were found in a chamber which presented the appearance of having been the secret

treasure chamber of the tribe, and with them were found four figurines representing females, one of which was egg-shaped, the lower part of the egg terminating in a male face. Besides these curious objects there were stones with rude drawings of animals, such as a horned rhinoceros, a reindeer, etc., and, more remarkable still, several stones with inscribed letters in a script bearing a close likeness to the script discovered at Knossos by Mr. Arthur Evans. It is, however, the finding of the amulets and figurines so closely resembling those discovered on Clydeside in the crannog by Mr. Donnelly and at the hill fort of Dumbuie that makes this Portuguese discovery so important in its relation to the evidence afforded by the Scotch examples of what would seem to have been a particular phase in the development of peoples in the Neolithic stage of culture in Europe. Dr. Birch, Mr. Gould, Mr. Forster, and others took part in an interesting discussion upon the subject. A second paper was then read by Mr. S. W. Kershaw upon "The Forest of Galtres," one of the most extensive forests in England, comprising over 100,000 acres and containing over sixty townships, which remained a Royal forest until 1670, when an Act of Parliament was obtained for its division and enclosure. Galtres was celebrated for its abundance of deer, and this district of Yorkshire was anciently known as Deira or Deerland. It was a hunting ground of Saxon and early Norman kings, but the former, after they had established their Heptarchy, seem only to have appropriated such lands as were unoccupied. The boundaries of Galtres are mentioned in the "Perambulation of the Forest," in the ninth year of Edward II., 1316. This document is preserved in the Record Office, London. Mr. Kershaw referred to several MSS. preserved in the Library at Lambeth which touch on the history of the forest in the early XVIIth century, amongst them being the "Shrewsbury Papers," seventeen folio volumes, which consist of letters written to or by several of the Earls of Shrewsbury, and from these he read interesting extracts relating to the government of the forest. The government of the northern forests, including Galtres, forms a distinct and very interesting phase of England's history.

THE LONDON COUNTY COUNCIL.

THE first meeting of the London County Council after the Christmas recess was held on Tuesday in the County Hall, Spring-gardens, S.W., Lord Monkswell, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend Greenwich Borough Council 824*l.* for purchase of borough hall (balance); Lewisham Borough Council, 1,868*l.* for paving and other works, and 2,250*l.* for contribution to cost of reconstruction of bridge; Stepney Borough Council, 2,883*l.*, for electric light installation; Bethnal Green Guardians, 2,000*l.*, for poor law purposes; and School Board for London, 200,000*l.*, for new schools, etc. It was also agreed to sanction the following applications: Hampstead Borough Council, 20,500*l.*, for erection of buildings for depot, etc.; Islington Borough Council, 3,653*l.*, for electric light installation; and Westminster City Council, 32,000*l.*, for purchase of site for housing purposes.

Long Grove Asylum.—The estimate of 6,550*l.* submitted by the Finance Committee for the erection of the fencing of the Long Grove Asylum estate, clerks of works, and contingences, was approved.

Direct Telephonic Communication between Theatres and Music-halls and the Fire Brigade.—The Theatres and Music-halls Committee recommended as follows: "That, except in those cases where direct telephonic communication with the nearest fire brigade station has been already established, a letter be sent to every licensee of every theatre and music-hall within the administrative county of London in which performances are regularly given, requiring him to at once take steps to place in direct telephonic communication with the nearest fire brigade station the premises for which he holds a licence."

The recommendation was agreed to.

Drury-lane Theatre.—The Theatres and Music-halls Committee reported as follows:—

We have recently received many letters of complaint as to the structural condition of Drury-lane Theatre, and the practice of standing in gangways being allowed by the management, and also complaints with regard to the seating arrangements in the stalls. The Council is of course aware that this theatre is what is known as a patent theatre, and therefore is not within the licensing jurisdiction of the Lord Chamberlain. So far as the Council's powers are concerned, we may remind the Council that a sealed notice, under the Metropolis Management and Building Acts Amendment Act, 1878, was served on the owners of the premises in 1895, and that, in view of the decision of Mr. Justice Channel, in 1900, in the case of St. James's Hall, it would appear that the Council cannot legally serve another notice under the Act above referred to, unless possibly in the case of further structural alterations being made by the owner. The only requirements, therefore, that the Council can legally enforce at this theatre are requirements dealing with fastenings to exit doors or gates and exit notices. The Council has power to serve a sealed order embodying requisitions of this nature by virtue of the 45th section of the Metropolitan Board of Works (Various Powers) Act, 1882, to which further reference is made below. It was found necessary, however, in 1901 to revise the regulations for the protection of theatres from fire, and all the old theatres, including Drury-lane Theatre, have been thoroughly examined since that time by the Council's officers, and suggestions for bringing the premises as far as possible into accordance with the regulations now in force have been formulated and sent to the respective owners. In the case of Drury-lane Theatre the suggestions were forwarded to the owners in April last, but so far no satisfactory proposals have been made by the directors for dealing with them. We are therefore of opinion that the premises in their present condition cannot be considered safe from the danger of fire. This unsatisfactory state of affairs is accentuated by the fact that the management of the theatre, without any authority from the Council, alter the seating in the stalls during the pantomime season (which seating, when arranged in the ordinary manner, is not as good as what is required by the present regulations) by putting the rows of seats closer together, and so greatly adding to the seating capacity of this part of the house. We have further to call the attention of the Council to the fact that on an inspection of the premises being made during a performance on the evening of the 8th January by one of the Council's officers it was found that the intersecting gangways of the gallery were entirely obstructed by persons seated on the steps, and that the outer iron gates leading to Russell-street were chained and padlocked, and thus the Royal and stalls exits, which deliver at this place, were rendered unavailable. The fastening was removed at once on attention being called to it by the Council's officer, but for such a defect as this a remedy exists, and we are strongly of opinion that this is a case in which the Council should serve a sealed notice under section 45 of the Metropolitan Board of Works (Various Powers) Act, 1882, with respect to the fastenings on exit doors, exit notices, etc."

The Committee recommended that a notice under the 45th section of the Metropolitan Board of Works (Various Powers) Act, 1882, containing various requirements, and specifying twenty-eight days as the time within which they are to be complied with, be prepared by the solicitor; that it be sealed in duplicate, and be served upon the person or persons by whom the premises are kept open for public entertainments.

Consideration of the matter was adjourned.

Lambeth Bridge—Ironwork.—The Bridges Committee reported as follows, the recommendation being agreed to: "The ironwork of Lambeth Bridge, as the Council is aware, is in a very unsatisfactory condition, and it has been found necessary to open up the lower booms of the main girders with a view to ascertaining whether it is possible to check the rapid deterioration of the metal. The estimated cost of this work is 150*l.*, for which provision has been made in the annual maintenance estimates. This can only be regarded in the light of a preliminary inspection, as, until the bridge is opened up, it is impossible to estimate with any degree of certainty the extent of the repairs which will be required. It is anticipated that, if the bridge is to remain open to traffic much longer, continual repairs of various kinds will have to be undertaken. We recommend that expenditure not exceeding 150*l.* be sanctioned for opening up and inspecting the ironwork of Lambeth Bridge."

Statue of King James II.—The Historical Records and Buildings Committee reported as follows: "The Council is probably aware that the statue of King James II., which, since 1897, had stood in the garden adjoining Gwydyr House, in Whitehall, was removed from that site in 1902, in connexion with the Coronation festivities. Upon it coming to our knowledge that the question of the site upon which it should be re-erected in London was engaging the attention of the First Commissioner of His Majesty's Works, we suggested, for his consideration, the desirableness of the statue being re-erected upon its last site in Whitehall, which, though in some respects not such a suitable place as its old site in Whitehall-gardens at the back of the Banqueting Hall, was, in our opinion, preferable, owing to the fact that it was more accessible to the public. The statue has, however, now been erected in St. James's Park, on the grass plot in front of the Admiralty Buildings. We report the facts for the information of the Council."

Thames Embankment Extension and Westminster Improvements, Re-housing—Millbank Estate.—The Housing of the Working Classes Committee recommended, and it was agreed, that Gainsborough, Wilkie, Landseer, Lawrence, Leighton, Turner, Romney, and Hogarth-buildings, Millbank Estate, be appropriated under section 4 of the Housing of the Working Classes Act, 1900, for the purpose of re-housing persons displaced in connexion with the Thames Embankment extension and Westminster improvements, under the powers of the London County Council (Improvements) Act, 1900.

Piccadilly, between Arlington-street and the Green Park.—On the recommendation of the Improvements Committee, it was agreed that the action of the Committee in arranging with the Westminster City Council to deal with the question of vaults to be constructed in connexion with the widening of Piccadilly between Arlington-street and the Green Park, and to undertake at an estimated cost of 1,600*l.* the paving and other works, be approved.

Having transacted other business, the Council adjourned.

APPLICATIONS UNDER THE 1894 BUILDING ACT.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parenthesis:—

Lines of Frontage and Projections.

Hampstead.—The retention of Nos. 4 and 5, Buckingham-mansions, West-end-lane, Hampstead (Messrs. Boehmer and Gibbs for Mrs. E. A. Cave).—Consent.

Wandsworth.—Buildings on the north-west side of Wimbledon-park-road, Wandsworth, eastward of "Allenswood" (Mr. J. M. Jones for the Land Development Syndicate).—Consent.

Kensington, North.—A porte-cochère at the entrance to the offices of the Clement Talbot Automobile Works, on the north side of Edinburgh-road, St. Quintin's-park (Mr. W. S. Walker for Messrs. Clement Talbot, Limited).—Consent.

Lewisham.—One-story shops upon part of the forecourts of Nos. 283, 285, 287, and 289, High-street, Lewisham (Mr. H. Bignold for Mr. H. B. Atkinson).—Consent.

Fulham.—Buildings on a site on the south-east side of Townmead-road, Fulham (Messrs. Humphreys-Davies and Co. for Messrs J. B. Lee and Sons).—Consent.

Hampstead.—That the application of Mr. A. E. Pridmore for an extension of the period within which the rebuilding of the "White Horse" hotel, Fleet-road, Hampstead, to abut upon Constantine-road, was required to be commenced, be granted.—Agreed.

Holborn.—A porch to No. 37, Queen's-square, Holborn (Mr. W. H. Ansell for the National Deposit Friendly Society).—Consent.

Lewisham.—A one-story shop in front of No. 135A, Sydenham-road, Lewisham (Mr. J. Benjamin for Mr. E. Clark).—Consent.

Lewisham.—Projecting porches to a terrace of twenty houses on the south side of George-lane, Lewisham (Messrs. Norfolk and Prior for Mr. C. C. Story).—Consent.

Mile-end.—A two-story addition to No. 99, Cephas-street, Globe-road, Mile-end (Mr. W. E H. Crawley for Mrs. Weller).—Consent.

Peckham.—A one-story addition in front of Nos. 24 and 26, High-street, Peckham (Mr. G. F. Morgan).—Consent.

St. Pancras, West.—The rebuilding of the St. Pancras female charity school, Hampstead-road, St. Pancras, with projecting porch and bay window (Mr. S. G. Goss for the trustees of the school).—Consent.

Strand.—Two iron and glass shelters at the Gaiety Theatre, to abut respectively upon the Strand and Aldwych (Messrs E. J. Prest and Co. for Messrs. E. Runtz and Ford).—Consent.

Wandsworth.—One-story shops upon part of the forecourts of Nos. 1 to 10, Kingsley-terrace, Garratt-lane, Wandsworth (Mr. G. P. Pratt for Messrs. A. Aldridge and Co.).—Consent.

Hammersmith.—A one-story shop at the rear of No. 24, Shepherd's-bush-green, Hammersmith, to abut upon Camden-gardens (Mr. A. Dawkins for Messrs. Kellett and Firth).—Refused.

Kensington, South.†—Buildings on a site abutting on the north-western side of Kensington-road and eastern side of Melbury-road, Kensington (Messrs. Drivers, Jonas, and Co.).—Refused.

Lewisham.—Buildings on a site abutting upon the east side of Mayow-road and north

side of Sydenham-road, Lewisham (Messrs. I. Edmondson and Son for Mr. J. Edmondson).—Refused.

Lewisham.—An addition at the flank of No. 37, London-road, Forest-hill, to abut upon Queen's-road (Mr. H. G. Brace for Mr. A. J. Dorrell).—Refused.

Norwood.†—A show-case in front of Nos. 247 and 249, Coldharbour-lane, Norwood (Messrs. Bursill and Ladyman, Ltd.).—Refused.

St. George, Hanover-square.—A projecting porch to Nos. 1 and 2, George-street, St. George, Hanover-square, to abut upon Conduit-street (Messrs. Patman and Fotheringham, Ltd. for Messrs. J. Broadwood and Son).—Refused.

St. Pancras, South.—A one-story shop upon the forecourt of No. 334, Gray's-inn-road, St. Pancras (Messrs. J. T. Bressey and Son for Rev. A. S. Baker).—Refused.

Lines of Frontage, Projections, and Width of Way.

St. Pancras, East.—The erection upon a site between Nos. 156 and 166, Euston-road, St. Pancras, of buildings with a projecting porch and bay windows, and with new pillars and railings to the forecourt, and to the enlargement of the existing cellars under such forecourt, and the erection of steps and railings at the rear of the buildings at less than the prescribed distance from the centre of the roadway of Grafton-place (Messrs. Essex, Nicol, and Goodman for the Hearts of Oak Benefit Society).—Consent.

Bethnal-green, South-west.—Buildings on the north side of Merceron-street (late Thomas-passage), Bethnal-green (Mr. J. Holmes).—Consent.

Kensington, South.—The rebuilding of Nos. 1 to 13, Leonard-place, Kensington-road, to abut also upon Edwardes-square (Messrs. Leslie Marsh and Co.).—Refused.

Lines of Frontage and Construction.

Hampstead.—An iron and glass carriage-washing shed in front of No. 49, Maresfield-gardens, Hampstead (Messrs. C. Saunders and Son, Ltd. for Mr. J. E. Withers).—Consent.

St. George-in-the-East.—Two iron bridges to connect a building on the south side of High-street, Wapping, with a proposed building on the north side of that street eastward of Church-court (Mr. C. Dunch for the London and Northern Estates Company, Ltd.).—Consent.

Width of Way.

Whitechapel.—Outbuildings at the Jews' Free School, Whitechapel, with external walls at less than the prescribed distance from the respective centres of Bell-lane and Frying-pan-alley (Mr. E. R. Robson for the managers of the school).—Consent.

Bermondsey.—That the Council do not accede to the request of Messrs. Humphreys-Davies and Co., on behalf of the South-Eastern Railway Company, for permission to erect a boundary fence next a block of working-class dwellings on the south side of Abbey-street, Bermondsey.—Agreed.

Woolwich.—A one-story building at the rear of No. 140, High-street, Woolwich, with external walls at less than the prescribed distance from the centre of the roadway of Elizabeth-place (Mr. J. O. Cook for Mr. H. A. Sheerman).—Refused.

Chelsea.—The covering in of a portion of a stable yard abutting upon the western side of Paradise-walk and northern side of Dilke-street, Chelsea (Messrs. Robertson and Co.).—Refused.

Southwark, West.—A building on the site of a way leading out of the south side of Clink-street, Southwark, with external walls at less than the prescribed distance from the centre of the roadway of Clink-street (Mr. H. Baerselman).—Refused.

Marylebone, West.—The rebuilding of Nos. 4 and 5, Cumberland-mews, Edgware-road, St. Marylebone (Messrs. Hudson and Hunt for the Church Army).—Refused.

Width of Way and Construction.

Bow and Bromley.—The construction of a steel shed on the north side of Rosebank-road, Bow, and with the forecourt fence at less than the prescribed distance from the centre of the roadway of the street (Mr. A. P. Stokes for Messrs. J. Manger and Son, Ltd.).—Consent.

Westminster.—An addition at the flank of No. 1, Montpelier-square, Knightsbridge (Mr. A. Williams for Mr. C. D. Harrod).—Refused.

Kensington, South.† — A wood and iron addition at the rear of Holland Lodge, No. 35, Addison-road, Kensington, to abut upon Holland-park-road (Mr. J. Boarder for Mrs. Moore).—Refused.

Width of Way and Projections.

Westminster.—A building upon a site abutting upon the west side of Barton-street and south side of Great College-street, Westminster (Mr. A. B. Jackson for the Governing Body of Westminster School).—Consent.

Width of Way and Space at Rear.

Fulham.—An addition to buildings on the south side of Effie-road and east side of Effie-place, Fulham (Mr. G. Pestall for the Metropolitan District Railway Company).—Consent.

Formation of Streets.

Lewisham.† — That an order be issued to Messrs Tompkins and Connew sanctioning the formation or laying out of a new street for carriage traffic, to lead from Kirkdale to Peak-hill, Sydenham, and in connexion therewith the widening of a portion of Peak-hill.—Consent.

Buildings for the Supply of Electricity.

Bermondsey.—Additions to the generating station and works on the west side of The Neckinger, Spa-road, Bermondsey (Mr. R. J. Angel for the Council of the Metropolitan Borough of Bermondsey).—Consent.

Cubical Extent.

Hoxton.—The extension of a building at Wharf-road, City-road, Hoxton, so that such building would exceed in extent 250,000, but not 450,000, cubic feet (Mr. P. E. Pilditch for the Gutta-Percha Company).—Refused.

Cubical Extent and Construction.

Greenwich.—The erection on a site abutting on the River Thames and approached from Blackwall-lane, Greenwich, of a building to exceed in extent 250,000, but not 450,000, cubic feet, to be used only for the purposes of the trade of a structural engineer (Messrs. Mark Fawcett and Co.).—Consent.

Deviation from Certified Plans.

St. Pancras, South.—Deviations from the plans certified by the District Surveyor, under section 43 of the Act, so far as relates to the proposed erection of a building on a site on the southern side of Tottenham-street and eastern side of Charlotte-street, St. Pancras (Mr. F. T. Verity for Mr. E. D. Maddick).—Consent.

Deviation from Certified Plans and Projections.

St. George, Hanover-square.—Certain deviations from the plan certified by the District Surveyor, under section 43 of the Act, so far as relates to the proposed rebuilding of a portion of No. 159, Piccadilly, and consent to the erection of a wooden oriel window to such building (Messrs. Joseph, Son, and Smithem for Lord Burnham).—Consent.

Space at Rear.

Kensington, North.—A bakehouse at the rear of No. 383, Portobello-road, Notting-hill (Mr. P. E. Gallagher for Mr. P. J. Münch).—Consent.

Kensington, South.—A four-story addition on the south side of No. 51A, Warwick-road, Kensington (Mr. W. G. Hunt).—Consent.

Lambeth, North.—An alteration to Nos. 117 and 119, Oakley-street, Lambeth (Messrs. Stock, Page, and Stock for Mr. S. Taylor).—Consent.

Kensington, South.—That the Council do make no order on the application of Mr. C. W. Stephens on behalf of Harrod's Stores, Ltd. for consent to the retention of blocks (Nos. 3, 4, and 5) of residential flats on the south-east side of Brompton-road, Kensington, with open spaces about such blocks.—Agreed.

Kensington.—A modification of the provisions of section 41, with regard to open spaces about buildings, as far as relates to blocks (Nos. 6 and 7) of residential flats on the south-east side of Brompton-road, Kensington (Mr. C. W. Stephens for Harrod's Stores, Ltd.).—Refused.

Fulham.—Buildings at the rear of No. 10, Parson's-green, Fulham (Mr. T. Heath).—Refused.

Space at Rear and Height of Buildings.

Holborn.—A building upon a site abutting upon Drury-lane and Kean-street, Holborn (Mr. H. P. Drew for Messrs. Boobbyer).—Consent.

Means of Escape at Top of High Buildings.

Kensington.—Deviations from the plans approved in respect of the means of escape in case of fire proposed to be provided, in pursuance of section 63 of the Act, at blocks, Nos. 1, 2, 3, and 6, Oakwood-court, Addison-road, Kensington, so far as relates to alterations in the means of escape at blocks Nos. 2 and 3 (Messrs Rolfe and Matthews).—Consent.

Kensington, South.—Means of escape in case of fire proposed to be provided, in pursuance of section 63 of the Act, on the sixth and seventh stories of Nos. 63 and 83, Oakwood-court, Addison-road, Kensington, so far as relates to the position and size of a doorway from the back room nearest the main staircase to the hall on the sixth and seventh stories (Messrs Rolfe and Matthews).—Consent.

The recommendations marked † are contrary to the expressed views of the local authority.

THE LONDON MASTER BUILDERS' ASSOCIATION:

ANNUAL DINNER.

THE Annual Dinner of the London Master Builders' Association was held on Tuesday evening in the Alexandra Hall, Trocadero Restaurant, Piccadilly-circus, W., Mr. Ernest J. Brown, President, in the chair. The company included Mr. W. F. King, President of the Institute of Builders; Mr. C. W. Green, President of the National Federation of Building Trades Employers of Great Britain and Ireland; Mr. W. F. Wallis, President of the Southern Counties Federation; Mr. W. P. Lewis, President of the South-Western Centre, National Federation; Mr. J. W. White, J.P., President of the Northern Centre, National Federation; Mr. J. Sharman Wood, J.P., President of the Midland Centre, National Federation; Mr. T. Parkington, President of the Eastern Counties Federation; and Messrs. W. E. Riley, Architect to the L.C.C.; Percy Preston, Master of the Worshipful Company of Carpenters; G. J. Brown, Master of the Worshipful Company of Tylers and Bricklayers; C. Ansell, J. M. Beveridge, L. Blake, C. E. Blomfield, A. E. Brown, J. Carmichael, J. Howard Colls, F. H. Crittall, D. Gardener, J. S. Gibson, G. Bird Godson, T. Gregory, F. Higgs, T. W. Havlock, H. A. Heffer, G. W. Humphreys, A. C. W. Johnson, J. R. Julian, W. J. Locke, D. W. McInnes, F. May, W. Nicholson, G. Parker, A. E. Parker, E. Price, J. Randall, L. C. Randall, C. P. Roberts, R. M. Roe, A. Ritchie, J.P., G. C. Sherrin, T. Seward, W. Shepherd, H. Smith, H. J. Treadwell, S. G. Thacker, C. W. Wall, J. B. Wells, Howell J. Williams, L.C.C., R. S. Henshaw, W. Lawrance, J. Brown, J.P., H. Crickmay, D. J. Driver, J. A. S. Hassal, and T. Costigan, Secretary.

The loyal toasts having been honoured, Mr. A. Ritchie, J.P., C.C., suitably proposed "The Imperial Forces," coupled with the name of Mr. J. Howard Colls, who responded.

Mr. W. F. Wallis then gave the "London Master Builders' Association and its President." The Association was not a thing of yesterday, he said; it had attained to a respectable age, and it was now at the very apogee of its power and influence. For several years very little was heard of the Association, but now it took high rank, if not the highest, amongst builders' associations. Perhaps this result was due to these convivial gatherings, which in the history of guilds, etc., were responsible for the creation of bonds of union between men. The Master Builders' Association had been singularly fortunate in two respects—*i.e.*, in obtaining such a secretary as they possessed, and also in the Presidents they secured. Mr. Costigan, the secretary, met all emergencies in a manner which indicated a man of no ordinary character, and he accepted his responsibilities with a willingness and earnestness which was beyond praise. However much he might be occupied with business, their secretary always had a genial smile, and was ready with valuable words of advice. The Presidents of the Association had been men of character, and there were other able men still eligible. He was quite sure that the present President would prove himself the equal of those who had preceded him.

The President, in reply, said that during the past twelve months they had had a very quiet time in the building trade, but the Association had made steady and excellent progress. The membership had increased, and the increased subscription had been paid readily—other Associations and Federations might very well emulate them in this respect. There were no arrears of subscriptions, which was no doubt due, in a large measure, to their secretary, to whose tact and hard work he could testify. It was a matter of surprise that there should be any firm of respectability in the trade who could keep outside the Association, and he was glad to say that there were very few such firms; one would think that with such an organisation in existence they would join the Association, and so strengthen it, numerically and financially, especially as it was to their interest to do so, and that if they did not they would have no one to help them in a time of trouble. The workmen

were united, and they co-operated in a marvellous way, and it was a pity that the masters did not take advantage of what had been done by the Association, and what was being done, for the benefit of the building trade. As an illustration of the necessity for this co-operation on the part of the master builders of London, he might mention the following: They had formed a scheme with the object of improving the working hours during the winter. They spent a long time on the scheme, which they thought would be acceptable to the men. He met the representatives of the men privately, and they were evidently contented with the proposals, but when they met the Council as a body they said they could not accept the scheme, giving as their reason that all master builders did not belong to the Association. That showed the necessity for all builders being members of the Association. Great interest in the work of the Association was taken by the Council, as was evidenced by the full meetings they had. He regretted to say that their friend and past-President, Mr. Lough, had not, owing to an affliction, been with them since the last annual dinner, when he presided, and he was sure they would all join in an expression of sympathy to Mr. Lough. He regretted to announce that the Association had lost, through death, Mr. John Greenwood, the treasurer; Mr. Robert Turtle, an energetic member of the Council; and Mr. Benjamin Nightingale. They could not but deplore the loss of these gentlemen, but they welcomed the advent of new members. He was glad to say, also, that their friend, Mr. Ritchie, had joined them that evening.

Mr. W. F. King, President of the Institute of Builders, then proposed "The National Federation of Building Trades Employers of Great Britain and Ireland." The Federation was the link or the bond that united the Associations which were scattered throughout the country, and converted the weakness of isolation into the strength of unison. This was the work which the Federation was formed to carry out some twenty-five years ago, and they could all appreciate the uphill work which had been entailed in bringing the Federation to its present state of efficiency. It was no small task to guide the destiny of one Association, but it was a much greater work to unite the conflicting interests to be found in the north and in the south, the east and the west, and to induce them to work together for the good of the trade. The Federation was in a much more prosperous and satisfactory condition than it had ever been before, and this success was largely due to the able men who had filled the office of President. He had much pleasure in coupling with the toast the name of Mr. C. W. Green, President of the National Association.

Mr. Green, in response, said that the success of the London Association was largely due to their energetic secretary, but in London they were more concentrated, and it was much easier to keep in touch with the members. The National Federation included many Associations and many Federations, and he hoped that they would be able in time to show as good a record as the London Association had this year. They looked upon the London Association as a model Association, because it had what he called technical standing committees—committees of the various trades connected with the trade, and it was his object and aim, since he had been in connexion with the Federation, to follow the lead of the London Association in this respect. Supposing a disturbance occurred between employer and employed in any particular trade, it was possible to refer the dispute to the trade committee of the Federation, and await the advice of that body of experts. He believed the success of the London Association had been largely due to this system.

Mr. J. Brown, J.P., then proposed "The Architects and Surveyors." After a long experience he was able to say that the interests of these professions and the interests of the builders were identical, and he knew that when difficulties and trouble arose the best friends the builders had were the architects under whom they were working. Mr. Brown, having referred to the antiquity of the architectural profession, said the architect was the man who creates, the man who showed what was to be done. He had often wished that it could be possible to take a few dreamers, put them apart from others, and let them dream dreams, without the necessity of thinking about their daily bread, and then—after some years, to put those visions of beauty into being. This was not possible, and the dreams of men of genius were lost to the world because of the daily work of the world. An architect could not only make designs of beauty, but he knew, and had to know, a great deal about construction, etc., and, however glorious might be his dream, he would have failed if he did not succeed, for instance, in keeping out of his building such elements as wind and wet. The knowledge of the architect had to be profound on the scientific side, and complete on the side of beauty. It was a glorious thing to belong to the architectural profession. The quantity surveyor had come into existence in comparatively recent times, and the amount of care they took and the correctness they displayed in their work was really wonderful. With the toast he coupled the names of Mr. J. S. Gibson and Mr. Walter Lawrance.

Mr. Gibson responded for the architects. He said that architects had to rely on builders to make their work really tangible, and to put their designs into execution. All really good architecture was founded on sound building, and in the complexities of modern life and practice architects looked to builders to give them sound building, so as to portray in the best manner possible the designs of architects. There was no doubt that the architectural profession was a very old one. It was rather curious that from about the XIth century to the XVth century the architects who were responsible for the magnificent cathedrals in England and France were master builders; but now architects had ceased to be builders in one respect, and he was glad to say that they had been able to put upon the shoulders of others some of the worries incidental to modern building, for there was thus left to architects some time to dream those dreams they had heard about; but, no matter how beautiful those dreams might be, an architect wished to see his designs carried out, for no drawing, however clever and good, could adequately portray the meaning or beauty of his work; only the building could do that. Attendant on the worries of building, architects hoped builders would be merciful in the matter of extras; architects would take care to look after omissions. He wanted to tell them of a very beneficent practice amongst the Greeks at the time when they erected some of their fine temples. The Greeks evidently knew what to expect from architects or builders, and, when they gave a commission to erect a temple, as a preliminary they required that the architect should deposit with the authorities bonds or security to a considerable amount. If in the erection of the building the extra or additional work did not exceed 25 per cent. the architect was paid, and nothing was said about the extras, but if they exceeded 25 per cent. the architect had to defray the additional cost out of the security he had deposited. He thought the modern English practice a much better one.

Mr. Lawrance, in responding for the surveyors, referred to the recently-formed Quantity Surveyors' Association. There had for a long time been a need of some body or association to check the preparation and issue of bills of quantities by unqualified practitioners. Unfortunately, the Surveyors' Institution, embracing all branches of the surveyors' profession, had not been able to devote to the subject the attention which it deserved. The Quantity Surveyors' Association would endeavour to supply the need by the admittance to its ranks of men who by practical experience and training were fully qualified, and by the admission of younger men after examination in the practice and work of quantity surveyors. Unfortunately the Association had received a good deal of unfair criticism, and the qualifications the Association intended to enforce had been criticised. One of those qualifications was to the effect that every member should be responsible and should pay for all loss caused by his errors on an appeal being made to the Council of the Quantity Surveyors' Association by either the builder or the building owner, and that if he refused to pay he should be expelled as a member of the Association. Was that not a step in the right direction? Of course that did not alter the present law on the subject one jot. Builders were responsible for many of the evils relating to quantities. They often based their tender on so-called bills of quantities which they knew were fit only for the waste-paper basket, and they tendered for work without quantities. Why they should saddle themselves with an expense which ought to be borne by the building owner he did not know. In several provincial centres builders had refused to tender for work of any importance or size unless proper quantities were supplied. As the first President of the Quantity Surveyors' Association, he looked to builders for support, for their sole aim was the improvement of the work of the quantity surveyor.

Mr. W. Shepherd proposed the concluding toast—*i.e.*, "The Guests," coupled with the name of Mr. Percy Preston, Master of the Carpenters' Company. Mr. Shepherd referred to the value and importance of the work done by the Company in the establishment of technical schools in connexion with the building trade.

Mr. Preston, in responding, said there were some classes in connexion with the Trades Training School at Great Titchfield-street which they would like to see more adequately supported by builders. He specially referred to the plasterers' class, and if builders would send more men to the class not only would the plasterers themselves receive benefit but their employers would also. There was another point he would like to refer to. The Company had lately taken up the question of forestry, for they thought that afforestation was a most important matter. Land owners and those who had land at their disposal should do all they could to further the growth of timber in this country. The Company had offered prizes for essays on the subject, and they had received forty or fifty papers, and from these they hoped that some good would come. On the 25th of February a lecture was to be delivered on forestry in the Hall of the Carpenters' Company by Professor Schlich, of Cooper's Hill College, and it was to be hoped that there would be a good audience of builders and others interested. The lecture would deal with the necessity of looking to the growth and planting of trees to replace those cut down. He might mention that a list of workmen was to be prepared by the superintendent of the school at Great Titchfield-street, and he trusted that master builders who needed men would apply to the superintendent. Only efficient men would be put on the list.

The proceedings then terminated.

THE BUILDERS' FOREMEN'S ASSOCIATION.

THE tenth annual dinner of the Builders' Foremen's Association was held on Saturday last in the Throne Room of the Holborn Restaurant. The chair was occupied by Mr. Charles K. Burtt (Messrs. C. Burtt and Son, Camberwell), who was supported by Mr. B. T. Price (President of the Association), the Mayor of Camberwell (Mr. H. R. Taylor, L.C.C.), and Messrs. J. Wright Clarke, Eric Earle, J. Girdler, Le Marchant, R. N. Taylor, G. Thomson, F. A. Ruddle, and a large company of members and friends.

The loyal toasts having been honoured,

The Chairman proposed "The Builders' Foremen's Association." The Association, he said, was started in 1894, and had steadily increased its membership and funds ever since, until it had reached a satisfactory financial position, with a balance in hand of 290*l.*, which was an increase in the year of 85*l.* But what was still more gratifying was that the aims and work of the Association were being more generally recognised in the building trade, as was shown by the increased amount received in honorary subscriptions and donations. The satisfactory financial condition of the Association had enabled the executive to disburse last year more than 20*l.* in grants to those members needing assistance. There had been no deaths amongst the members during the past year, and the insurance fund showed a satisfactory balance of 159*l.* During the past year a work had been started which had been under discussion for some time, *i.e.*, the old age pension fund. It had been started on very modest lines, but it was hoped to enlarge its scope as the funds of the Association increased. A great deal of hard work had been necessary to put the Association in its present satisfactory condition, and he thought they could congratulate themselves on having such excellent officers. He felt it was a great pleasure to be associated with such a society, which had for its aims the help of its members in time of trouble

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R VAN HOVEN & HERR NEHER, JOINT ARCHITECTS.

R. A. Gold Medal, 1903.

DESIGN FOR A DOMED CHURCH.—By

PERSPECTIVE VIEW

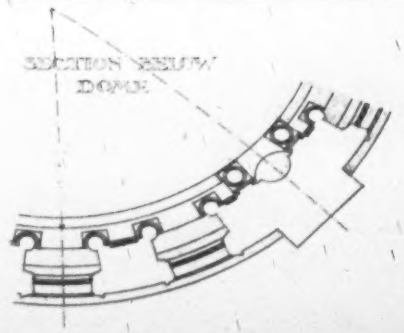
"INK-PHOTO" SPRAGUE & Co. L^TD 4 & 5, EASY HARDING STREET, FETTER LANE, E.C.

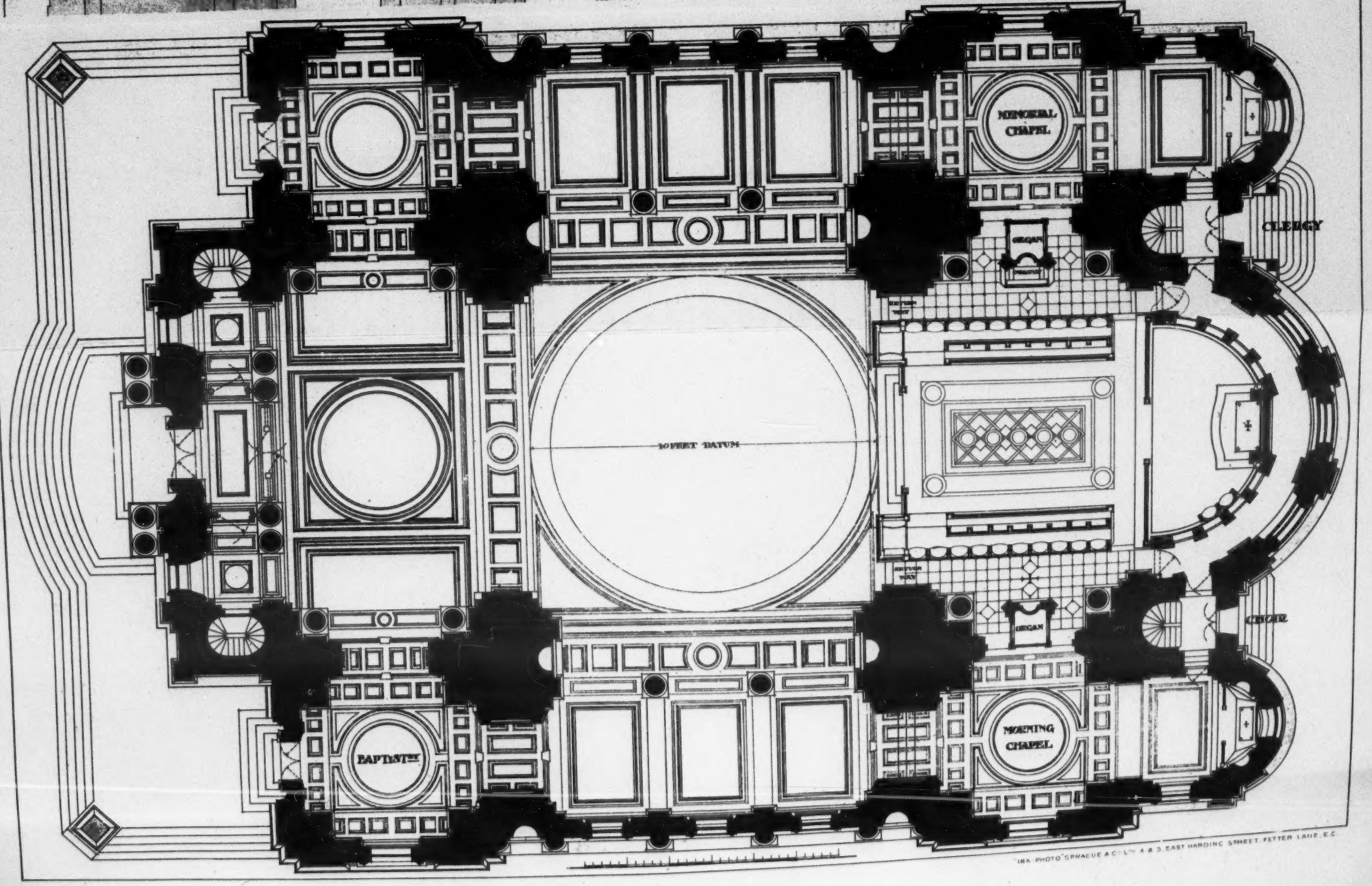
URCH.—By Mr. Lionel U. Grace.

TIVE VIEW.

DESIGN FOR 'A DOMED CHURCH'

LONGITUDINAL SECTION'





R. A. Gold Medal, 1903.

DESIGN FOR A DOMED CHURCH.—By Mr. Lionel U. Grace.

SECTION AND PLAN.

DESIGN FOR A DOMED CHURCH.—By Mr. E. Vince

SUBMITTED IN COMPETITION FOR THE R. A. G

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R. E. VINCENT HARRIS, A.R.I.B.A.

THE R. A. GOLD MEDAL.

and their intellectual advancement as well, and he would be glad to become associated with them as an honorary member. We were apt to forget that we could make this workaday world better and happier than it is by being honest and industrious citizens and by helping others when they were in distress. It now required much active vigilance to achieve success in the world, for capacity was tested now by a far higher standard than ever it was before. We had to make a great sacrifice if we wished to retain our places in this competitive age, and we could not hope to bear the stress of work for as many years as our forefathers did, and this old age pension scheme would help the less fortunate of their members to end their days free from financial care, while to the successful members it would afford an opportunity of doing that good which meant so much morally and physically. He congratulated them on their success and on starting the old age pension scheme.

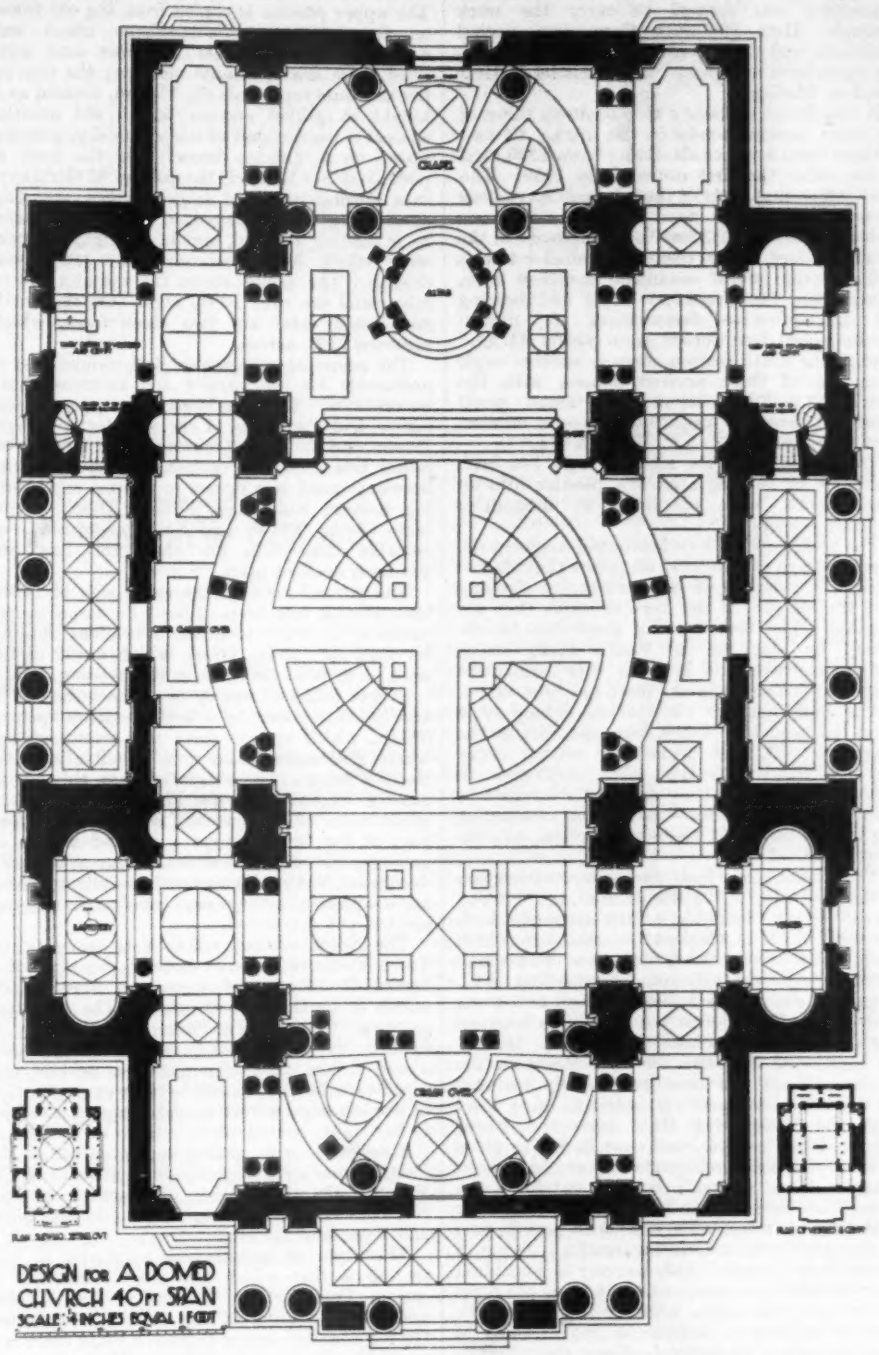
Mr. B. T. Price, President, who responded, said he should like to mention that their Chairman had sent the Secretary a cheque for 20*l.* for the good of the Association, and he hoped that all those who could would do something in the same direction. He hoped that the work of the Association would become more generally known and that many more foremen who were eligible would join their ranks. There was nothing in their aims or rules to cause discord or strife; on the contrary, their objects were to bring about good feeling amongst builders' foremen, to bring them into social intercourse one with the other, to promote their welfare in every possible way, and to make them more fit to fill the position they occupied.

Mr. G. Thomson then proposed "The Building Trades." He said he was sorry he could not congratulate them on a year of prosperity in the trade, for from what he had seen the past year was one of depression in the building trade. But trade fluctuated; there were periods of good and bad trade and he hoped that last year was the last of the cycle of bad years and that this and succeeding years would show much improvement. No trade more directly showed prosperity or depression than did the building trade. One noticeable tendency in the industry was for firms to amalgamate and become syndicates, and he was wondering how that would affect them all. He did not think they would have the same feeling towards their principals when these great combines were effected, but he felt sure that their employers would never get on without foremen as long as foremen did their work well. Another matter was the American invasion with which they had been threatened; as to which, he hoped that the civic authorities would stop any tendency to erect those hideous "sky-scrapers" which were to be seen in the States. He hoped that foremen would take up all that was good in the American work and reject anything that was bad. The endeavour of the Association was to keep the members well informed in all matters relating to their business; to raise them intellectually and give them as far as they could greater capacity to carry on their duties. They helped one another as much as possible by associating together, for that had become more and more a necessity in these days. He hoped that all those foremen who were eligible would join them without delay. It was an excellent thing to help one's self and at the same time help others. One of the features of the past year was the excellent course of lectures delivered to the Association, all on subjects of direct interest and instruction to members, by authorities on the various subjects. During the year, too, visits to buildings and works had been made, and in addition to the other works of the Association they had heard about he might mention the establishment of the "Quarterly Report," which formed a journal of the Association's transactions. With the toast he coupled the name of Mr. H. R. Taylor, Mayor of Camberwell.

Mr. Taylor suitably responded, and mentioned that he was a bricklayer by trade, his father was a bricklayer, and his grandfather also. As to the introduction into this country of American methods of building, he had the pleasure of going through the States last year on a commission to inquire into the American methods of industry, and he could say that those methods, so far as building construction was concerned, would never get any hold in this country. There were two reasons for this, but one reason above all others, *i.e.*, that in those methods of construction no value whatever was placed on human life. Americans did not seem to think it mattered how the work was done so long as it was done. He saw some fine buildings in the States, but, in spite of all that Americans had good reason to be proud of, he preferred the buildings of this country. For beauty and for durability of construction—which was more important, from his point of view, as no doubt it was from theirs—the English work could not be surpassed. Employers in this country had some interest in protecting human life. The American system of construction was altogether different from what it is here. In some work he saw being carried out there was no mortar in the bed or cross joints, and in reply to his question whether there was much work of that kind done, the answer was, "Not so much now as there used to be." The American method seemed to be to lay bricks without mortar, and he hoped that that sort of thing would never be done here. Some of the best men of this country had been connected with the building trade and he hoped it would always be so.

The concluding toasts were:—"The Visitors," proposed by Mr. R. N. Taylor and suitably acknowledged by Mr. J. Wright Clarke; and "The Chairman," proposed by Mr. E. Carter.

NEW ACADEMICIANS.—At a general assembly of Academicians and Associates of the Royal Academy of Arts, held on Wednesday evening, M. Léon Bonnat, painter, and M. Emmanuel Frémiet, sculptor, were elected honorary foreign Academicians, and Mr. Frank Brangwyn, painter, Mr. Charles W. Furse, painter, and Mr. H. Pegram, sculptor, were elected Associates.



Design for a Domed Church, by Mr. E. Vincent Harris, A.R.I.B.A. Plan.

Illustrations.

THE TOWN HALL, FRANKFORT.

FOR some years the increasing commercial prosperity of Frankfort had rendered the space provided for the Town Council in the Town Hall quite inadequate. This ancient Town Hall, or "Römer," as it is always called, was built in the XVth century, and contains an Electors' Room, or Wahlzimmer, where the Electors used to assemble, and also a Kaisersaal, in which are portraits of all the Emperors from Charlemagne (768) to Francis II. (1792).

It was suggested that this building might be converted into a museum, but the lighting of the rooms proved to be insufficient; moreover, the historical interest of the place was one reason for retaining at least the chief part of it for its original purpose.

It was decided, therefore, to build the new Town Hall, which was to contain all the necessary halls and offices, in connexion with, and as an extension of, the older building. This plan presented many difficulties owing to the limited space available, and also to "rights of way" which had to be preserved. Four architects undertook to make out plans on these lines; they were F. von Hoven, F. Luthmer, L. Neher, and H. Schmidt. The combined plans of the architects F. von Hoven and L. Neher were

finally accepted, and in the summer of 1900 a committee was formed to carry the work through. Herr Hellmuth Cuno was elected chairman, and the superintendance of the building operations was placed in the hands of Herr Stephan Blattner.

It was found necessary to pull down three of the most ancient houses in the town. Of two of these there are records dating from 1336, and of the other the first notice is in 1359. The most interesting parts of these houses have been incorporated in the new buildings; thus, an archway built in 1603 has been employed in the Council Room, and in one of the smaller towers a fine Gothic mural ornament has been used, representing the Frankfort eagle and bearing the inscription:—"Benedictum sit nomen domine nostri Jesu Christi Anno salutis MDXI." Also in the north section there is another eagle from one of these ancient houses, with the inscription:—"Hic locus odit amat punit conservat honorat nequitiam pacem crimina jura probos extruct. A.C. MDCCXVII."

The difficulty of the right of way has been overcome by turning a narrow passage into an inner court, with entrances at diagonally opposite corners.

The architects have endeavoured to group the new buildings so that from all points they should present a picturesque appearance, in keeping with the old part of the town in which they are situated. The best view of them can be obtained by standing in Paul's Platz facing Bethmannstrasse; it is from this standpoint that the illustration in our plate has been taken.

The buildings are constructed chiefly of a good red sandstone taken from quarries in the neighbourhood, but from the second story upwards basalt has been also employed to lighten the effect. They are best described as being in three sections—the section containing the Banqueting Hall, the South section, and the North section.

The Banqueting Hall forms a continuation of the west wing of the Römer Hall, or "Golden Swan." Here there is a fine entrance hall, through which is reached the staircase which leads to the second floor, where are the Council Chamber and the adjoining Banqueting Hall. A gallery which runs across this hall and overlooks Paul's Platz, forms the connexion between the Council Chamber and the Römer. It may be mentioned that the Electors' Room in the ancient Römer has been successfully restored by Herr F. Luthmer. A balcony, on a level with the Banqueting Hall, runs the whole length of this section; and over it, in the place of gargoyles, small sculptured figures have been placed. Here a small boy is catching the water from the gutter in his cap, there a monkey is slaking his thirst with wide-open mouth, and in another corner a little ragamuffin is flying in terror from a toad. This balcony is continued over the north gateway, where it takes the form of an open verandah, which will probably be used as a place of honour on the occasion of any procession or festival. Over the columns which support it are portrayed scenes from the life of "Reinecke Fuchs"; on the left two cocks are fighting, whilst in the centre the fox is stealing one of the hens, and on the right the captured thief has been brought to justice. The arms of Frankfort and its suburbs are displayed over the window of the first and second floors, against backgrounds of flowers and fruit.

On a level with the gallery there are various figures standing in niches under carved canopies—Science is represented with a lighted torch in her left hand and the spirits of Bigotry and Tyranny crushed under her feet. Art is next represented, and Abundance with an overflowing cornucopia; Commerce is shown holding a ship and the staff of Mercury in her hands, and Industry, wearing a mediæval head-dress and simple garment, bears a hammer, an anvil, and a cog-wheel.

The South section is grouped round three courts. The heating apparatus is laid under the middle court, and the two side ones, besides affording light and air to various offices and rooms, form part of the plan for preserving the right of way alluded to above. The chief entrances in this part of the building are in the north and south sides of the middle court, and from these spring the chief staircases, and other stairs are situated in the corner towers in Paul's Platz and the west court. Taking the whole group of new buildings together, there are in all eleven different staircases.

The principal tower is in the South section, at the corner of Bethmannstrasse. It rests on foundations which are laid on the rock 42 ft. below the street level and rises to a height of 227 ft. The upper portion is copied from the old tower on the bridge at Sachsenhaus which was destroyed in 1765. On the east and west sides there are two large mosaics; the one on the east side represents St. Florian, dressed as a knight in golden armour and a red mantle, against a background of deep blue sky, pouring water on a flaming house. On the west is portrayed St. Michael, the patron of Germany, in a flowing robe and mighty wings, standing against a golden background; in his left hand he is holding a shield, and in his right a spear, with which he is subduing the traditional dragon. The eagles above the mosaics are in relief, and are over 10 ft. high. On the north and south sides are two clock faces, which measure 13 ft. across.

The principal entrance in Bethmannstrasse is noticeable for the variety and richness of its decorations. The Frankfort arms appear in the centre, and the heads of the architects, F. von Hoven and L. Neher, crowned with laurels, on either side. On the columns which flank the doorway stand two figures in copper, representing Konrad Koler and Wilhelm Dilich, architects of the XIVth and XVIIth centuries. A suitable inscription for the scroll has not yet been decided upon.

The ground floor on the south side of Bethmannstrasse has been utilised for large shops, probably in order to insure a brilliant lighting for that part of the street, which would otherwise be in semi-darkness in the evening.

It was found necessary to connect the North and South sections by a bridge, with a span of 59 ft., which springs from the second stories where Bethmannstrasse runs into Paul's Platz. Besides being of great practical use, this bridge greatly improves Paul's Platz, giving it the appearance of an enclosed court. The upper part of the bridge forms a covered arcade or passage, the ceiling of which is very artistically decorated, but the figures and medallions which are to appear in relief or semi-relief on the exterior are not yet completed.

The North section, which is to serve as the Town Treasury, is built more in the style of a bank. It is grouped round an inner court, which is roofed in with glass. The principal entrance faces Paul's Platz; the doorway is framed by two three-quarter columns, and above it are three figures; the middle one represents Justice, on her left is a figure bearing in her left hand a mirror, and grasping a rudder in her right, behind which sits an owl. This is "Foresight" who, gazing in the mirror of the Past, draws knowledge for the guidance of the Future. On the right of Justice reclines "Thrift," holding a long account in one hand and a purse in the other.

The style of architecture employed in this section is that which was most commonly in use in Frankfort at the end of the XVIIth and the beginning of the XVIIIth centuries. On the rounded corner in Paul's Platz there is a projecting bay, supported by a Medusa's head, which is finished above the cornice by a lantern in copperwork. The façade on the north side of Bethmannstrasse is similar to that on Paul's Platz.

The new buildings have been supplied with all modern conveniences, such as a central heating system, electric lighting, lifts, electric bells, and telephones. The interior, however, is still incomplete, and awaits extensive decorations at the hands of sculptors and artists.

The illustration is from a photograph taken on the day of the official opening. We are indebted to the architects for this and for sending us a printed description, from which the foregoing particulars have been compiled. We much regret that they did not also favour us with a plan, which would have been of considerable interest.

A DOMED CHURCH.

THIS design has been awarded the Royal Academy Gold Medal, a Prize of Books, and Travelling Studentship of 200*l.* for the Study of Architecture abroad. The subject as set was:—

A Domed Church, 40 ft. span, and not less than 120 ft. long inside. The drawings to be six in number, and consist of two elevations, two sections, and plan; all to be drawn to a scale of 4 ft. to 1 in., and each drawing to fill a double elephant sheet of paper; also a perspective view in which the building shall not be less than 24 in. in width.

This subject, although no doubt very inspiring, is by no means an easy one to treat, and though a rectangular plan may possibly be rather commonplace, it is evidently one of the most satisfactory methods upon which to construct "A Domed Church" of this description, both for convenience in working and for internal effect.

The building is intended to be constructed entirely of Portland stone and concrete, with oak and bronze fittings and furniture. The plan is divided internally into a cruciform distribution of area, the longitudinal compartment being split up into three divisions, with the central portion carried up and surmounted by a dome about 40 ft. in diameter (being my interpretation of the above requirements). The dome and western bay form the nave, while the eastern portion, terminated by an apse pierced for windows and also lighted from semi-dome over, forms the chancel and sanctuary.

The north and south arms are separated from the central domical area by columns of the Corinthian order 22 ft. 3 in. high from floor to underside of cornice, upon a plinth 18 in. high, thus providing complete bases to range round the ambulatory; these columns help to carry the wall or tympanum under the main arches supporting the sides of the dome; this wall is carried up as a clearstory pierced by a large central window, and becoming external between the cupolas placed at the four corners of main portion of building. The almost similar wall at the western end is carried upon coupled columns spaced wider apart than the single columns on north and south sides, to provide space for the main central entrance, and pierced over for a larger central window than those provided in the similar space on north and south elevations.

The east end is of a triapsidal termination, with separate entrances and lobbies for the clergy and choir, each lobby being provided with stairs up to the cupolas and down to the vestries in the basement; similar stairways are also provided at the west end; these lobbies are also connected above ground level by an ambulatory as shown on plan, thus giving easy and uninterrupted access to all parts of the building, also to the memorial and morning chapels immediately upon either side of chancel.

The organ partially fills the archways between chancel and these side chapels, being constructed upon carved oak corbels projecting out over the return way for communicants behind the choir stalls, with the organist's seat upon north side facing the choir, the top of the console and the back of the choir stalls being upon a level.

The open screen forming the ambulatory would be in oak, panelled up to 5 ft. 6 in. above the ambulatory floor and filled in immediately behind altar table, which would also be accentuated by pediment over same filled in with carving.

Three entrances are provided at the west end, with a main central entrance, approached by broad flights of steps, lighted at either end by lamps carried upon heavy bronze standards and stone bases.

The south-west angle of the building forms a baptistry, the marble font being raised above the main floor level, and the cover, which is suspended from the ceiling with counterpoise, etc., of richly-worked bronze.

It was my ambition to provide a plan adaptable to modern requirements and at the same time producing an internal effect of mystery with light and shade without the use of gaudy and unnecessary ornament, together with an elevation correctly interpreting the plan. All carving and ornament would be concentrated upon the chancels, the side chapels, and fittings throughout.

The four spandrels below the dome and between main arches were to be filled in with sombre mosaics, and the upper portions between the ribs of the dome and over the west end to be filled in with appropriate frescoes; these would be lighted from square-headed windows immediately below the dome, the glazing of which is set back so as to be hardly visible from the floor of the nave and from the west window.

L. U. GRACE.

DESIGN FOR A DOMED CHURCH.

THIS design, by Mr. E. Vincent Harris, was one of those submitted in competition for the Royal Academy Gold Medal; we referred to it at the time as being a design of considerable character, and certainly the best of the unsuccessful ones; we wish, therefore, to take the opportunity of publishing it.

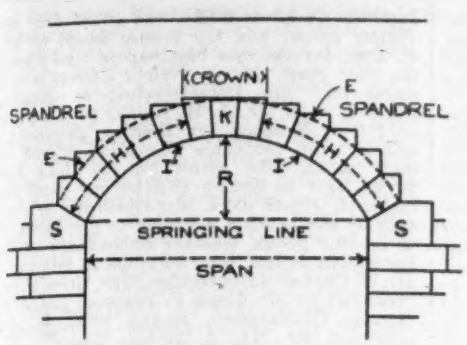

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Fig. 33.

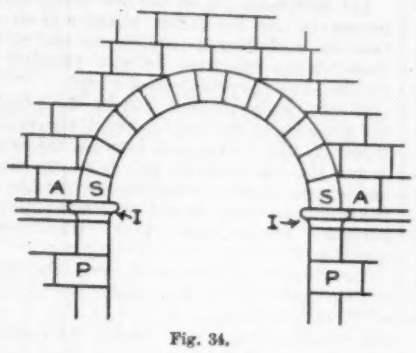
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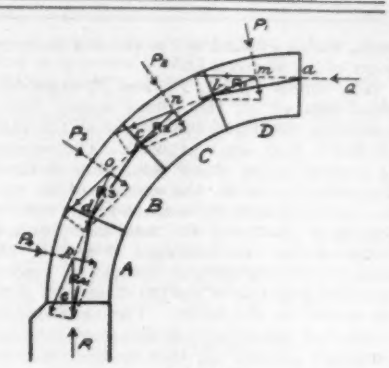
Fig. 34.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arch, and is applied at the point *a* in the outer joint of the voussoir D.

The forces P_1, P_2, P_3, and P_4 represent the resultants of all the forces acting upon the voussoirs, including the weight of the material of which they are composed. The voussoir D is in equilibrium under the action of the three forces Q, P_1, and R_1 the reaction of the voussoir C. Consequently these three forces must intersect at a point, and the resultant pressure R_1, between the two voussoirs D and C, can be found by the graphical method in accordance with the principle of the parallelogram of forces, as shown in the figure. The resultant R_1 is applied at the point *b* in the joint between the voussoirs D and C, this being the point of intersection.

Similarly, the voussoir C is in equilibrium under the action of the three forces R_1, P_2, and R_2, the last being the reaction between the voussoirs C and B. The direction, magnitude, and point of application of R_2 can also be determined by the graphical method. In this case the point of application is at C in the joint between the voussoirs C and B.

The directions, magnitudes, and points of application of R_3 and R_4 are ascertained in like manner.

The points *a*, *b*, *c*, *d*, and *e* in Fig. 35 are designated the *centres of resistance* for the voussoir joints, and the line *abcde* is the *line of resistance* of the semi arch. But the points *a*, *b*, *c*, *d*, and *e* may be considered alternatively as the *centres of pressure*, being the points of application of the pressure upon the voussoir joints. In that case the line *abcde* would be termed the *line of pressure* of the semi arch.

To be strictly accurate, the line of resistance is a continuous curve in which the equilibrated polygon *abcde* is inscribed. The greater the number of joints the nearer does this polygon approach the true line of resistance, and with an infinite number of joints the polygon is transformed into a curve coinciding with the line of resistance.

Sometimes the polygon *mnop* is described as the line of resistance, and as the number of joints is increased so does the polygon approach the curved form. For an infinite number of joints the resulting curve *mnop* is identical with *abcde*, the curved line of resistance.

We may now direct attention to the fact that if four jointed rods were placed in the positions occupied by the lines *ab*, *bc*, *cd*, and *de* in Fig. 35, and were acted upon by the forces Q, P_1, P_2, P_3, P_4 and R as indicated, they would be in a state of equilibrium, although the equilibrium would be unstable.

Let us now assume that by some means stability has been imparted to the series of jointed rods, considered to be represented by the lines *ab*, *bc*, *cd*, and *de* in Fig. 35. The arch so formed is now an inverted linked chain, and is in perfect equilibrium. Hence a curve passing through the joints *a*, *b*, *c*, *d*, and *e* is termed a *linear arch*. This simple demonstration may serve as a further elucidation of the definition of the linear arch given on p. 86 in our last article.

We will now see how stability is secured in actual practice. Suppose that instead of being built up of jointed rods, taking the place of the four lines in Fig. 35, the arch were composed of stone blocks or voussoirs having curved surfaces, allowing them to rock upon each other to a certain extent. Each voussoir will then only touch its neighbour at one point, such points being termed *points of contact*, and the line connecting these points is a linear arch. An arch so constructed clearly differs from an ordinary arch, in the respect that the centre of pressure at the joints is shown by the points of contact, while the rocking of the stones will cause such alteration in the position of the points as may be necessary to preserve equilibrium.

It is clear that a rocking action of the kind described gives the arch a stability which cannot be possessed by an inverted series of linked rods. The loads may be altered, or the form of the arch may be disturbed within certain limits, without causing failure of the structure, and each voussoir will remain in equilibrium if the vertical force, consisting of the applied load and the weight of the material, be balanced by the two forces exerted upon it by neighbouring voussoirs.

The action described is fully explained by Fig. 36, in which the arch is formed of the voussoirs A, B, and C, between the abutments N and Q.

Let it be assumed, in the first place, that the weight W on the centre voussoir is so great that the equilibrated polygon, or line of resistance, takes the form of two straight lines disposed like the principals of a roof.

If the superimposed weight be removed, the pressure at the joint between the voussoirs B and A, and the reaction between the voussoir A and the abutment N, will lie in one straight line which, meeting a similar straight line from the other abutment Q, will give an equilibrated polygon conformable with the required conditions.

If, however, the necessary horizontal force is not furnished by the abutments, the two forces at the joints between N and A and A and B will constitute a couple tending to rotate the voussoir A, so that the point of contact between N and A will be lowered, and the point of contact between A and B will be raised. A precisely similar action will occur in the case of the voussoir C, with the result that the weight can be balanced by a smaller horizontal force.

The rotation of the voussoirs A and C, together with the accompanying descent of the voussoir B, would clearly tend to force back the abutments N and Q, and consequently to increase their horizontal action if they were stable. If these abutments continued to yield under the thrust, the voussoirs A and B would continue to rotate until the points of contact reached the extremities of the curved surfaces. Therefore the horizontal thrust to be met by the abutments diminishes as the voussoirs rotate, and the structure will continue to support the load so long as the abutments N and Q are able to furnish the minimum thrust required for an equilibrated polygon intersecting the joints inside the ring, providing, of course, that the polygon does not intersect the joints at such an angle that the voussoirs can slip.

Looking at the matter in another way, if the abutments exercise horizontal pressure upon the voussoirs A and C, greater than is consistent with two lines of pressure passing through the points of contact, then the direction of the rotation of the voussoirs A and B will be reversed, and they will turn round so as to accommodate themselves to a position suitable for meeting an excessive horizontal thrust.

The altered position of the voussoirs, by permitting the forward movement of N and Q, will tend to relieve the horizontal thrust of the abutments, and the arch will not fail unless the points of contact reach the extremities of the curved surfaces, when failure will occur by the pushing-in of the sides and the squeezing-out of the centre voussoir B.

This result would not follow, however, with voussoirs of the shape shown in Fig. 36, because, before the final position could be reached, the points of contact would lie in a straight line corresponding with an infinite horizontal thrust.

Hence, whether the horizontal thrust furnished by the reaction of the abutments be too small or too great, the three voussoirs A, B, and C can rock in such a manner as to adapt the centre of pressure to the existing horizontal force, and a condition of stable equilibrium is always possible.

BOOKS RECEIVED.

ROMAN HAYLING. By Talfourd Ely, F.S.A. (Taylor and Francis. 5s.)

FREEHAND DRAWING AND ORNAMENT. By John Carroll. New and revised edition. (Burns and Oates. 1s. 6d.)

LAXTON'S BUILDERS' PRICE-BOOK FOR 1904. (Kelly's Directories, Ltd. 4s.)

INSTITUTION OF HEATING AND VENTILATING ENGINEERS.

THE annual general meeting of this Institution was held on January 19 at the Holborn Restaurant, when over fifty members and associate members signed the register. Mr. Louis F. Pearson, President for the past year, presided. Eleven new members and four associate members were elected.

The report and balance-sheet, showing a balance in hand of 58*l*. 19s. 1d., was passed, and the ballot for the Council resulted in the following being elected:—Messrs. W. Yates, C. Mason, T. Potterton, J. L. Saunders, J. N. Greenall, C. Barter, E. W. Mayner, A. B. Simpson, C. I. Haden, and C. T. O. Trotman.

Mr. Edward Taylor, Hon. Secretary, having asked to be relieved of some of his duties, was appointed Hon. Treasurer, and his son, Mr. Arthur Taylor, was elected Secretary. The Institution's silver medal was awarded to Mr. Walter Jones, and the bronze medal to Mr. F. Dye, for the two best papers read during the past year. Mr. J. Nelson Russell read a paper on "The Determination of Heating Surface," and Mr. A. H. Barker gave a paper on "Cost Keeping for Heating Engineers," and a most profitable discussion ensued on each paper. The prizes for the three best papers sent in during 1903 by any *bonâ fide* assistant, either clerk, draughtsman, or foreman of any heating engineer or manufacturer of heating goods, whether connected with the Institution or not, were awarded as follows:—Mr. G. Chasser (Stourbridge), first prize, 5*l*. 5s., presented by Mr. Louis F. Pearson; Mr. J. F. Hamer (Darlington), second prize, 2*l*. 2s., presented by Mr. J. Nelson Russell; Mr. N. K. Niness (Leeds), third prize), 1*l*. 1s., presented by Mr. A. B. Simpson.

It was decided to hold the summer meeting on July 19, time and place to be selected.

METROPOLITAN ASYLUMS BOARD.

THE usual meeting of this Board was held at the offices, Victoria-embankment, on Saturday last week. Among the correspondence received was a letter from the Local Government Board, forwarding copies of an order authorising the re-construction of the South-Eastern Hospital, at a cost not exceeding the sum of 135,200*l*., and the borrowing of that amount, to be repaid in twenty years. The report of the Works Committee contained the following estimates of costs for the annual cleaning and painting works and repairs during 1904, at the undermentioned institutions. The estimates are those of the Engineer to the Board:—Brook Hospital, 2,200*l*.; North-Western Hospital, 344*l*.; Smallpox Hospitals, 270*l*. 10s.; Leavesden Asylum, 563*l*.; Darenth Asylum, 1,200*l*.; East Cliff House, 119*l*. It was agreed that the work should be carried out by contract in each case. On the recommendation of the same Committee, it was agreed to appoint Messrs. Thomas Dinwiddy and Sons, of Greenwich, as architects for the adaptation of Belmont Asylum. A number of contracts accepted will be found among this week's "Tenders."

ROYAL COMMISSION ON LONDON LOCOMOTION.

AT the sitting of the Royal Commission on London Locomotion on Thursday last week, evidence was given by Mr. Deputy Pryke, Chairman of the Bridge House Estates Committee of the Corporation. Replying to the Chairman, Sir David Barbour, the witness said that the total cost of building, freeing from toll, repairing, and rebuilding London, Southwark, Blackfriars, and the Tower Bridges had been, between the years 1760 and 1902, about 3,500,000*l*., exclusive of annual maintenance. The Corporation was applying in the ensuing session of Parliament for powers to rebuild Southwark Bridge, at an estimated cost of 350,000*l*. The scheme involved the rebuilding of the bridge and piers, only the shore abutments of the existing structure being utilised. The width between the parapets would be increased from 42 ft. 6 in. to 60 ft. 6 in. The re-building would greatly improve the gradients—on the City side from 1 in 20 to 1 in 50, and on the south side from 1 in 23 to about 1 in 40.5. It was anticipated that the re-building of the bridge would result in a large increase of traffic over it, the present traffic being insignificant, owing to the steep gradients. During the last fifty years the Corporation had spent upwards of 6,000,000*l*. in effecting improvements within the City, mainly with the object of widening existing thoroughfares and building new ones for the accommodation of vehicular traffic. In his opinion, the introduction of tramways into the City would, to a great extent, nullify the benefit now derived from that enormous expenditure, by blocking streets already greatly congested with traffic. If the Corporation had the funds, he believed they would regard very favourably the provision of another bridge across the Thames, and his own opinion was that the best place for such a bridge was between Blackfriars and Southwark bridges. That would necessitate a new thoroughfare across Cannon-street down to the river.

Mr. Andrew Murray, the City Surveyor, gave evidence relative to the various street improvements which had been carried out by the Corporation. One of these was the Holborn Viaduct improvement, cost upwards of two and a half millions, and there was still a debt of 387,300*l*. outstanding on the work. The viaduct was 1,285 ft. long and 80 ft. wide; the carriage-way having a width of 50 ft. and the footways 15 ft. each; and it was opened by her late Majesty, Queen Victoria, on the same day as Blackfriars Bridge—November 6, 1869. Within a period of seventy years the Corporation, out of the City's cash, had contributed upwards of 1,200,000*l*. towards Metropolitan

and City street improvements, in addition to voluntarily applying the proceeds of the 4d. coal duty towards the same objects. That duty produced between 1862 and 1890 a total of 3,100,602*l*. The Corporation had also spent nearly two millions upon its series of markets at Smithfield. The area covered by the market buildings was about 7½ acres, and employment was given to some 9,000 persons. Every facility had been given to the public to save time by making the approaches as wide and convenient as possible. The Metropolitan Cattle Market at Islington was removed from Smithfield in 1885, and stood upon a site of 75 acres. In connexion with the building of that market a number of new roads were laid out and maintained for many years by the Corporation as private roads. The Foreign Cattle Market at Deptford was built at a cost of over half a million in 1872. Shadwell Market was acquired by the Corporation under statutory authority in 1902, and they were considering a scheme for the widening of High-street, Shadwell, from an average width of about 27 ft. to 50 ft., and the laying out of new streets, and general improvement of the property, including the erection of artizans' dwellings. 140,000*l*. had already been spent on the market. Spitalfields Market had also been acquired by the Corporation, and they were considering a scheme for dealing with the present congestion of traffic there, which would necessitate the purchase of blocks of property, and would displace some hundreds of persons of the labouring classes. The provision of new dwellings for these persons might possibly necessitate the acquisition of further Parliamentary powers.

Questioned in respect to the suggestion that tramcars should run over Blackfriars and Southwark Bridges, witness said he was of opinion that the effect would be to entirely nullify the benefits intended to be created by the re-building of Southwark Bridge. In his opinion the introduction of such large vehicles as tramcars in any part of the City would tend to largely increase the congestion of vehicular traffic. New streets were required, or the widening of existing ones, but they necessitated the expenditure of large sums of money, while various interests were always affected, provoking opposition, which necessarily resulted in long periods of time elapsing before even one such improvement could be effected.

At a further sitting of the Royal Commission on Friday, Captain Nott Bower, Commissioner of the City Police, gave evidence, and stated that, notwithstanding street improvements, the majority of City streets, even under normal conditions, hardly afforded accommodation for the vehicles using them. He referred to the constant breaking up of the streets by various statutory companies, and suggested that the police should have power to say in what order streets should be broken up. He considered that the suggestion to bring a tramway along the Thames Embankment and across Blackfriars Bridge was a most inadvisable and injudicious one, and, if carried out, would introduce an added element of danger at Chatham-place. The tramway, if constructed, would serve no useful purpose other than that of bringing people across Blackfriars Bridge. The scheme, if sanctioned, would probably be used later on as an argument in favour of a more direct tramway route from south to north, viâ New Bridge-street, Ludgate-circus, and Farringdon-street, and the strongest possible opposition to this was felt, from a police point of view, as it would lead to a complete dislocation of the traffic, and cause very serious congestion. He had no objection to shallow underground tramways.

Superintendent Francis, of the City Police, endorsed the evidence of Captain Nott Bower. With reference to the suggestion that subways or bridges should be made at busy crossings for the accommodation of cross vehicular traffic, he felt the adoption of such a course would increase the existing evil, for drivers would not use a double slope if they could possibly evade it. He also considered that the provision of further subways for pedestrians would practically amount to a waste of money, having regard to the limited use made of the Mansion House subway.

ENGLISH PAVILION, ST. LOUIS EXHIBITION.—In mentioning this in our last issue, by a slip of the pen it was referred to as a reproduction of "the Orangery at Kew." It should, of course, have been "Kensington."

MEMORIAL TABLET, ROCHDALE.—The Mayor of Rochdale recently unveiled a memorial tablet affixed to the north wall of the Unitarian Church, Blackwater-street, Rochdale, in memory of Robert Bathe, M.A., the founder of the first Nonconformist church in the parish. The tablet has been executed in white marble and veined polished English alabaster by Messrs. Harry Hems and Sons, of Exeter.

GENERAL BUILDING NEWS.

ST. OSWALD'S CHURCH, WEST HARTLEPOOL.—The new Church of St. Oswald's, West Hartlepool, is 15th century in style, with a tower at the west end, a lofty nave and chancel of equal width, a range of seven four-light windows in the clearstory on either side, and a seven-light window at the east end. The extreme length of the church from east to west is 133 ft., and the width across nave and aisles 55 ft., sitting accommodation being provided for 800. It is built of stone, and the roofs are of pitch pine. The floors are of pitch pine blocks throughout. The chancel steps are of Languedoc and Pavonazza marble. The whole of the internal wood fittings are of oak. The reredos is of oak, having seven sculptured panels in high relief, the principal panel representing the Ascension, with detached figures on either side of the Blessed Virgin Mary and St. John the Baptist. The other panels represent the Nativity, the Epiphany, Baptism, the Agony in the Garden, the Crucifixion, and the Resurrection. Besides these there are painted panels with the twelve apostles, and below them again another set of twelve panels on which is painted the Apostles' Creed; there are also twelve sculptured angels in niches, all the sculpture being from the designs of Mr. J. Eadie Reid, the painted panels being both designed and executed by him. The sculpture is executed by Mr. Ralph Hedley, together with all the carved oakwork throughout the church. One of the features of the church is a rood beam with groining and tracery below, surmounted with a carved cross. The font is of alabaster, and is carved with eight figures in niches representing St. Ninian, St. Patrick, St. Columba, St. Aidan, St. Gregory, St. Augustine of Canterbury, St. Paulinus and Theodore of Tarsus. There are also eight small figures of angels in niches. The font is raised on three steps, the one immediately below it being of alabaster with carved risers. The font canopy is of oak and has four main posts, upon which it is supported, each of these posts being surrounded by figures representing St. Aidan, St. Paulinus, St. Oswald, and St. Edwin. Externally the western porches have figures of St. Oswald and St. Edwin in niches over the doorways. These last-mentioned figures are by Mr. C. W. Milburn, of York, the remainder of the stone carving and marble work being by Mr. R. Beall, of Newcastle. The church is lighted by electricity, the electric instalment and fittings being supplied by Mr. T. W. Hunter, of West Hartlepool. It is heated by hot water on the low pressure system by Messrs. Dinning and Cooke, of Newcastle. A peal of ten bells is being cast by Messrs. J. Warner and Sons, of London, and a clock is being made by Messrs. Thwaites and Reed, also of London. The east window is filled with stained glass from the studio of Mr. Herbert W. Bryans, of London, and also one of the windows of the morning chapel. The church was designed by the late Mr. W. S. Hicks, and has been completed under the superintendence of the present firm of Messrs. Hicks and Charlewood, of Newcastle-on-Tyne. The builders are Messrs. Thos. Dickinson and Son, of West Hartlepool.

THE NEWMAN MEMORIAL CHURCH, BIRMINGHAM.—The Duke of Norfolk presided on the 20th inst. at a meeting of the subscribers to the Newman Memorial Church in Birmingham, when a report was presented as to the financial position of the fund and as to the operations that have already been begun. It was reported that between 14,000*l*. and 15,000*l*. had already been received; and with this sum in hand a beginning has been made on the nave and side aisles of the new church, the completion of which is expected to cost about 11,000*l*. to 12,000*l*. The completion of the whole building is likely to cost from 25,000*l*. to 26,000*l*. Mr. Doran Webb, the architect, attended, and explained the nature of the design. The style is to be XVth century Roman. One of the features of the church will be twelve monoliths of old Breccia marble, said to be the largest monoliths ever imported into this country. On either side of the nave will open out six apsidal chapels, which will be floored in mosaic marble. The roofs of the halls are to be ultimately mosaic, but for the present will be left in rough concrete. The barrell roof is to be sweet chestnut, and all the exterior roof will be leaded. The height of the cornice, exterior and interior, will be 52 ft. The width of the nave is to be 33 ft., and its length 88 ft. The exterior length of the porch will bring it to 110 ft. This leaves the transept and naves still to be completed as the fund increases.

INLAND REVENUE OFFICES, LEICESTER.—New Inland Revenue, Probate, and County Court offices are being erected in Newark-street, Leicester. The offices in Newark-street will be used for Inland Revenue and Probate business, and the County Court offices will be situate in Upper Brown-street. This portion of the building will be completed first. Messrs. Bowles and Son are the contractors, and the architect is Mr. Hawkes, of H.M. Office of Works, London. The estimated cost of the building is between 7,000*l*. and 8,000*l*.

WESLEYAN CHAPEL, BIRCHGROVE, WHITCHURCH, NEAR CARDIFF.—The new Wesleyan Chapel in Birchgrove, near Cardiff, was opened recently. The building has been built at a corner site on Caerphilly-road, from the plans of Mr. Edwin Seward, Cardiff. It is designed with a view to its eventual use as a schoolroom, ground having been purchased in front of it where a larger chapel can presently be built. The building, which includes a chapel, classroom, and vestry, giving accommodation for 325, is of red brick, with Bath stone dressings, and was erected by Mr. S. Hanson, of Llanishen.

CHURCH, SKEWEN, GLAMORGANSHIRE.—A meeting of church-people of St. John's Church, Skewen, was held at the National School recently, to consider the erection of another new mission church on the Pentreffynon field. Plans were submitted by Mr. Halliday and approved of.

BUSINESS PREMISES, BELFAST.—New premises have been erected for Messrs. James Black and Co. in Great Victoria-street, Belfast. The building is of red brick, with dressings of stone from the Dumfries quarries. The general contractors for the work were Messrs. James Henry and Son, Belfast. Messrs. Wilson Bros. supplied the electric light installation, and Mr. John Dowling executed the plumbing work. The architect was Mr. Henry Seaver.

CAMPDEN HILL-COURT, KENSINGTON.—The contract for the erection of Campden Hill-court (Blocks D and E) has been secured by Mr. C. Gray, of Hampstead and Shepherd's Bush, W., at 56,100*l*., and the work has commenced. Messrs. Palgrave and Co. and Messrs. Rolfe and Matthews are joint architects.

BANK PREMISES, MIDDLEWICH.—New premises for the Birmingham District and Counties Banking Company, Ltd., at Middlewich, have been erected in Wheelock-street, and were opened on the 25th inst. The new bank has been built from the designs, and under the supervision of, Mr. Ernest E. Shepherd, architect, Nuneaton. The accommodation consists of bank and residence. The bank itself is on the ground floor, and at the rear of this are the manager's private room, strong room, and lavatory accommodation for the staff. The building is faced with Huncoat bricks and Hollington stone dressings. The main contract has been carried out by Messrs. Birchall Brothers, of Middlewich; decorating and lighting by Mr. O. Whitehead; the fittings, etc., in mahogany, by Mr. H. Cambridge; the grates and ironmongery by Messrs. Parsons, Sherwin, and Co.; and the lift by Messrs. Waygood and Otis. The total amount of the contract is about 2,100*l*.

CHURCH, CATFORD.—The Lord Bishop of Southwark laid the foundation-stone, on the 23rd inst., of St. Andrew's, Catford, S.E. The church is being built on the St. Germans Estate, from the design of Mr. P. Robson, the material being of red brick and Portland stone; the nave, which will accommodate about 1,000 worshippers, will cost about 8,600*l*.

CHURCH, CLYDACH.—A new church, costing over 8,000*l*., is to be erected at Clydach in connexion with the local St. John's Church, to accommodate its English congregation. Mr. E. Bruce-Vaughan, of Cardiff, is the architect of the new building, and the contractors are Messrs. Bennett Brothers, of Swansea.

STAINED GLASS AND DECORATION.

MEMORIAL WINDOW, LENHAM CHURCH, LANCS.—A stained glass window has been placed in Lenham Church, Lancs., in memory of the late Rev. C. E. B. Nepean. Mr. H. Bryans, of Messrs. Bryans, Regent's Park, N.W., was the artist.

LOXTON, SOMERSET.—The west window of this 14th century church has been filled with stained glass, in memory of the late rector of the parish. The subject of the window is the Ascension, and it was designed and painted by Messrs. Hean and Maerchant, of London. The ancient stonework of the window was restored by Mr. Addicot, builder, under the supervision of Messrs. Price and Jane, architects, of Weston-super-Mare.

MEMORIAL WINDOW, HARBLEDOWN.—The west window of St. Michael's, Harbledown, has been filled with stained glass as a memorial window. The window consists of four main lights and several smaller ones in the upper part. The subjects which occupy the two centre lights are "Christ blessing little children" and the "Adoration of the Magi." The incidents illustrated in the two outer lights are, in the right-hand light, "Samuel before Eli," "Elijah raising the widow's son," and "St. Elizabeth teaching St. John the Baptist," and, in the left-hand light, "The finding of Moses," "The raising of Jairus' daughter," and "St. Ann teaching the Blessed Virgin." In the tracery above there are figures of angels.

The details of the work are consistent with the style that prevailed in the Perpendicular period of Gothic architecture. The work was designed and carried out by Messrs. Lavers and Westlake.

SANITARY AND ENGINEERING NEWS.

DUST DESTRUCTOR, FELLING.—A new six-cell dust destructor and buildings are to be erected for the Felling Urban District Council, from the design and specification of their engineers, Messrs. Handcock and Dykes. The contract has been let to Messrs. Heenan and Froude at 8,699*l.* At their last meeting the Urban District Council resolved to apply to the Local Government Board to sanction a loan for the construction of this destructor.

LONDON SEWAGE AND PRECIPITATION OPERATIONS, 1903.—At Tuesday's meeting of the London County Council, the Main Drainage Committee submitted the following table, showing the quantities of crude sewage treated, chemicals used in precipitation, and sludge sent to sea, together with the quantity of refuse intercepted at the gratings at each of the outfall works at Barking and Crossness, during the year ended December 31, 1903:—

	Barking.	Crossness.	Total.	
Sewage treated	54,708,767,000	40,104,318,000	94,808,085,000	gals.
Daily Average	149,873,334	109,874,844	259,748,178	,,
Maximum daily flow	300,231,000	195,416,186	—	
Minimum daily flow	78,985,449	69,308,716	—	
Lime used	14,773	8,801	23,574	tons.
Proto-sulphate of iron used	3,289	2,259	5,548	,,
Sludge sent to sea	1,737,000	821,000	2,562,000	,,
Weekly average	33,404	15,865	49,269	,,
Refuse intercepted at gratings	3,856	940	4,796	,,

"From the above figures," it was stated, "it will be seen that at the Barking outfall one ton of sludge was extracted from an average of 31,493 gallons of sewage treated, as compared with 27,807 gallons in the preceding year, while at the Crossness outfall the average quantity of sewage treated to produce one ton of sludge was about 48,611 gallons, as compared with 42,922 gallons in the preceding year. The total quantity of sewage treated at the outfalls exceeded the flow in the previous year by 9,884,453,000 gallons."

CONSTRUCTION OF SEWERS, LONDON.—The Main Drainage Committee of the London County Council stated at Tuesday's meeting of the Council that they had sanctioned the construction of the under-mentioned local sewers, subject to certain conditions recommended by the engineer:—Battersea: 770 ft. of 12-in. pipe and concrete sewer in Carpenter-street, Culvert-road (reconstruction). Camberwell: 160 ft. of 12-in. pipe and concrete sewer in new road from Wyndham-road to Hollington-street. Lambeth: 356 ft., 350 ft., 340 ft., 400 ft., 500 ft., and 330 ft. of 12-in. pipe and concrete sewers in Anne, Agnes, Frances, Sutton, and Dolland streets and Broomgrove-road respectively (reconstruction); 270 ft. of 9-in. pipe and concrete sewer in Broomgrove-road (reconstruction); and 420 ft. of 12-in. pipe and concrete sewer in Hamilton-road (in substitution for sewer approved by the Main Drainage Committee on October 22, 1903). Lewisham: 450 ft. of 9-in. and 811 ft. of 12-in. pipe and concrete sewers in Fernbrook-road, Manor Park estate. Wandsworth: 395 ft. of 12-in. pipe and concrete sewer in Franciscan-road, opposite Moring-road, Tooting (in substitution for sewer approved by the Main Drainage Committee on November 26, 1903). Woolwich: 340 ft. of 12-in. pipe and concrete sewer in Grenadier-street, North Woolwich (in part substitution for sewers approved by the Main Drainage Committee on June 19, 1902).

FOREIGN.

FRANCE.—MM. Pascal, Vaudremer, Scellier de Gisors, Laloux, Moyaux, Raulin, Daumet, Loviot, and Bonnier have been elected by the Société Centrale des Architectes to form the architectural section of the Société des Artistes Français (Old Salon).——M. Tony Robert-Fleury has been elected President of the Société, in place of M. Bonguereau, whose three years' term of office has expired. The new President, who is the son of M. Robert-Fleury, the former Director of the Ecole de France at Rome, is sixty-five years of age. He is the author of many pictures that have been highly thought of—"Le Dernier Jour de Corinthe," "Les Danaïdes," "Vauban à Belfort," etc.——M. Saint-Anne Louzier has been elected President for 1904, of the Union Syndicale des Architectes Français.——The Société des Artistes Decorateurs has opened a very interesting exhibition on the ground floor of the Petit Palais, which will be open till February 16. Among the prominent exhibits are those of MM. Feuillâtre, Boutet de Mouvel, Massoul, Savine, Houillon, and Mdlle. Louise Abbema. There are also to be noticed the decorative schemes for rooms, etc., by MM. Sauvage, Lelievre, and Bigot ("une loge d'actrice"), a bedroom by M. Ott, a study by M. Follot, a drawing-room by M. Croix-Marie, and dining-rooms by M. Ducroq and M. Gallerey.——At the Petit Palais there has also been arranged the first exhibition of historical and documentary photographs, organised by the Paris Municipality. The special subject of this exhibition is the various aspects of the Seine and its banks, the flower-markets, and the buildings of the XVIIth century.——At the exhibition of the Cercle Volney, now open, are some excellent works by MM. Gabriel Ferrier, Tattegrain, Dewambez, and Bonguereau.——The jury in the competition for the transformation of the Grand Hôtel have awarded the first premium to M. Lucien Beehmann, the second to M. Fugairon, and the third to M. Olivier Carré.——It is proposed to adapt the ancient dungeon at Vincennes, built by Charles V., for a historical museum.——It has been decided that the monument by M. Bartholdi to the aëronauts of the Siege of Paris should be erected on the large open space formed by the crossing of three avenues at the end of the Avenue des Ternes.——A large railway hotel is to be built at Troyes.——M. Labrouste has been commissioned to design a large hotel for Chamounix.——It is proposed to undertake a new metropolitan railway line starting from the Invalides and following the line of the Grands Boulevards, returning to the Place de la Concorde by the Boulevard St. Germain.——The death is announced, at the age of 76, of M. Faure Dujarrie, a Government architect, and editor of the valuable reproduction of Du Cerceau's "Les Plus Excellents Bâtiments de France." He had been sub-Inspector under Duc for the works of the Cour de Cassation. In 1879 he was appointed architect to the Ecole des Ponts et Chaussées and to the Ecole des Langues Orientales, which he rebuilt. He was also architect for many private houses. He was created Chevalier of the Legion of Honour in 1884.

AUSTRIA.—A memorial of Mozart, in the shape of a fountain, is to be erected in Vienna; the sculptor is Herr Karl Wollek. Another monument in course of construction in Vienna is that to Johann Strauss, jun.——The restoration of the Cathedral of SS. Peter and Paul, in Brünn, has been undertaken by the architect August Kierstein, to whose plans the first premium was awarded.——A new tower is to be built to the Church of St. Jacob, Prague.——The new viaduct at Eibenschitz is completed; the work has been entrusted to the firm of Anton Kunz.——It has been decided to use part of the Samalov Gardens at Jungbunzlau as the site of the new theatre, for which a committee has been elected to select plans.——New Post Office buildings are also in course of construction.——The architect Heinrich Koschitz, well known both in Vienna and Berlin, died on January 6, in his fifty-fourth year.——The engineer Theodor Herzmansky died on December 5, in his fifty-sixth year.——The Vienna Town Council has granted a sum of 1,000 kreuzers to the committee which has been formed in connexion with a memorial to be erected to the artist Johann Martin Schmidt.

GERMANY.—The new Mechanical Laboratory in the Technical Schools at Brunswick has been recently opened; it consists of two large engine rooms and a two-storied building containing a lecture hall and living rooms for the resident engineer.——The engineer Dr. Friedrich von Hefner-Alteneck died at Berlin on January 7. The deceased was fifty-nine years old. His name will be perpetuated by his photometrical discovery called the "Hefner Light."

SWITZERLAND.—St. Michael's Church at Zug is completed. The architect is Herr Karl Moser; the capitals of the columns are carved after designs from Nature by the sculptors O. Kiefer, J. Hym, and W. Sauer. Herr H. Eichroot, painter, has also contributed several designs for mural decorations.——The Society of Arts at Lucerne has petitioned the Town Council either to build a museum in the west part of the town or to grant the Society the land, that it may use it for this purpose.

WAR MEMORIAL, ROCHESTER.—A memorial to Kentish soldiers and volunteers who fell in the late war was unveiled recently in Rochester Cathedral. Mr. W. D. Caröe, F.S.A., designed the work, Mr. F. N. Hitch, of London, executing it. The cost was 250*l.*

A FINE PIECE OF ILLUMINATION.—At Messrs. Zaehndorff's, Shaftesbury-avenue, there is on view for a few days a very beautifully illuminated copy of Milton's "Ode to the Nativity," by Miss Ibbs. The writing and illuminating, which are done on vellum, are very fine, and the binding is also a work of art.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—Mr. James Fotheringham Parker has been appointed managing director of the business of Messrs. Patman and Fotheringham, builders and contractors, of Theobalds-road, W.C., and Park-street, Islington.

COMPENSATION: WESTMINSTER IMPROVEMENT.—In the Westminster High Bailiff's Court, on the 21st inst., before Mr. John Troutbeck and a special jury, the case of Dunstall *v.* the London County Council came on for hearing. It was a claim for compensation for the compulsory acquisition of the leasehold interest in the premises 52, Millbank-street, S.W., required for the purposes of the Millbank improvement scheme. Mr. Lewis Coward, K.C., and Mr. Percival Clarke were counsel for the claimant; and the London County Council was represented by Mr. Edward Boyle, K.C., and Mr. Courthope-Munroe. Mr. Coward said his client was a coffee-house keeper, and the business had been established some twenty-four years. He held the premises under a twenty-one years' lease as from Midsummer, 1899, so that there were sixteen years unexpired. This new lease provided for a rental of 100*l.* per annum for the first ten years, and 110*l.* per annum for the remaining eleven. The claimant's net profits were agreed by the respondents to be 660*l.* per annum, but the jury would have to decide how many years' purchase he should have for having his business, which was practically a monopoly, entirely swept away. He claimed four years' profits, and the sum of 140*l.* had been agreed upon as the value of the fixtures, utensils, etc. Mr. Boyle contended that one year's purchase of his net profits and a sum of about 300*l.* would amply compensate the claimant, who would at once set up in business elsewhere. The jury, without leaving the box, awarded the claimant 2,500*l.*, to include everything.

WORKMEN'S DWELLINGS, SWANSEA.—The Swansea Borough Surveyor was recently entrusted to prepare specifications, etc., with respect to the erection of workmen's dwellings at Gibbet Hill. The Housing of the Working Classes Committee have now approved of a modified scheme. As at present arranged, the following are the dimensions of the different rooms:—Ground floor, front room, 13 ft. by 11 ft. 9 in.; living-room, 15 ft. by 11 ft.; scullery, 9 ft. by 8 ft.; with usual out-offices and a pantry under the stairs. Upstairs, front bedroom, 15 ft. 3 in. by 13 ft.; back bedroom, 12 ft. 3 in. by 11 ft.; bedroom over scullery, 9 ft. by 8 ft. The house will have a small fore-court, and the houses pitched up, so as to diminish the cost of excavation. The depth of the houses from front to back will be 30 ft. The fronts up to the first floor will be bricks, and then rough-cut or stucco work above, with double Roman tiles on the roof. Hot and cold water will be available in the scullery.

BRISTOL MASTER BUILDERS' ASSOCIATION.—The annual dinner of the Bristol Master Builders' Association took place, on the 19th inst., at the Royal Hotel, College Green, under the Presidency of Mr. A. Dowling. The loyal toasts having been suitably honoured, Mr. Frank N. Cowlin gave "The Lord Mayor and Corporation of the City of Bristol." Speaking of streets improvements, Mr. Cowlin reminded the company that recently some property was sold in Bristol at a figure higher than that fetched in the heart of London. Little chance had been given hitherto for the display of street architecture. He wished the city authorities would formulate a comprehensive scheme of streets improvements. There were practically only three important thoroughfares. He could see his way to making a fine new street from Park-street to the railway station; to the improvement of property in Marsh-street; to erecting new municipal buildings in the neighbourhood of Queen-square; and to the development of property in Old Market-street. Bristol was worthy of the traditions of the past, and in time would become again one of the greatest cities of the greatest empire in the world.—Alderman Godwin, in response, said he was of opinion that they had their work cut out to make the new docks remunerative. The way to accomplish that was by inducing railway companies to give favourable through rates. Respecting streets improvements, the speaker said that, although he would like Corn and Clare streets widened, the cost would be enormous, and made it impossible. In other parts of the city they might be carried out with advantage. In what they did they must count the cost. Their debts were growing enormously.—Councillor Parsons said he was opposed to the views of the alderman in regard to the extension of the boundaries. When they first went to Parliament they did not get the extension they ought to have had. Now they were going to Parliament with another scheme, which was of an important and serious character. Bristol was spending enormous sums of money at Avonmouth on dock extension, buying land, and increasing the value of

property. It would, therefore, be unfair for that to go to the Gloucester County Council; but it should accrue to the benefit of Bristol, which was spending the money.—Councillor Bastow also replied.—Mr. W. F. Long (Secretary of the South-Western Federation) proposed "The Trade and Commerce of Bristol," and Mr. W. M. Edwards (President of the Chamber of Commerce) replied.—Mr. Neale gave the toast of "Architects and Surveyors," and said that no flourishing centre of industry could possibly go on without its architects and engineers for long. Alterations and additions were constantly required to keep pace with the growth of prosperous businesses. Mr. Neale coupled with the toast the names of Mr. Frank Wills, Mr. W. P. Saunders, and Mr. A. P. I. Cotterell.—Mr. F. Wills replying, said that he firmly believed that a better spirit existed among architects and contractors at present than ever before. More confidence was shown each other, for both appreciated more fully the difficulties that had to be overcome, and, as a result, differences were settled with greater facility than hitherto. He desired to explode the idea that existed in the minds of the public that low contracts were sent in that the bill might be swelled by means of extras.—Mr. W. P. Saunders and Mr. A. P. I. Cotterell also replied.—Mr. W. H. Brown proposed "The National and South-Western Federations and Kindred Associations," and spoke of the unfairness of the terms of many contracts in years past, which made it needful for a common form of contract to be adopted. It was a matter for thankfulness that the Corporation of Bristol had agreed to a form of contract acceptable to them all. In framing it, the Town Clerk had met him and other officers of the Association in a most friendly and conciliatory spirit. A form of contract had also been arranged between the Royal Institute of British Architects, the Institute of Builders, and the National Federation. Such results could not have been obtained but for the existence of that Association. He urged upon builders the necessity of putting the best work into the tenements they constructed for the middle class and artisans, and of providing plenty of light and air and sanitary improvements.—Mr. J. B. Mercer (Secretary of the Bath Master Builders' Association) responded.—Mr. A. Krauss, who also replied, said it was just a little more than five and twenty years since the National Federation was started, and much good work had been done by it. They had considerably improved their position of late years. One of the great features was that they had a national contract form now in existence which was fair between architect and builder, which contract form it took nearly twenty years to get. The financial position had also greatly improved. The relations between architect and builder were now very harmonious, and better than they ever had been; and those between the master builders were very much warmer. The Board of Trade returns from employers' associations showed that employment was good with 4 per cent. of the workpeople, fair or moderate with 18 per cent., and dull or bad with 78 per cent. That compared unfavourably with last year. Kindred associations did not affect them a great deal in the west. That applied more to the north of England. At the time when he held the office of President of the National Association he had great hopes of getting the kindred associations—master plasterers, master painters, master plumbers, etc.—affiliated with them. It fell through, however, at the last moment.—Councillor C. Newth submitted "The Bristol Master Builders' Association," to which the President and the Hon. Treasurer replied; and the new President was introduced.

LONDON UNIVERSITY.—We have received a copy of the "London University Guide and University Correspondence Calendar," which gives all information as to degrees and the carrying on of courses of instruction by correspondence. Architecture does not appear to be included in the programme, but degrees in engineering are given. In this subject the examinations successively open to those who have matriculated or registered as students are:—(1) Intermediate Examination in Science (Engineering), (2) B.Sc. (Engineering), (3) D.Sc. (Engineering). The Intermediate Examination takes place in July, the B.Sc. in October. The fee for each of these two examinations is 5*l.*; for the D.Sc. (Engineering) it is 20*l.* The regulations can be obtained from the External Registrar of the University, South Kensington, S.W.

STORM FLOODINGS.—A conference of delegates of Borough Councils north of the Thames was held, on the 20th inst., at Paddington Town Hall, the Mayor, Alderman J. Williams, presiding, to consider the subject of periodical storm flooding north of the Thames consequent upon inadequate main drainage. Representatives of Paddington, whose Council convened the conference, of Fulham, Hammersmith, Hampstead, Islington, Kensington, Marylebone, and Stoke Newington were present. After discussion it was unanimously resolved, on the motion of Councillor Bryen, seconded by Alderman Tomkins, both of Islington, that the conference "viewed with alarm and regret the great delay of the London County Council in giving effect to their engineer's reports of 1891 and 1899 dealing with the question of the main drainage of London, and urged upon the Council the necessity, in the interests of public health, of pressing forward the work already in hand, and taking steps to at once construct the new intercepting sewer for flood waters from Paddington to Old Ford between the high and middle level sewers recommended in 1891, and the new sewer between the middle and low level existing sewer, as recommended in 1899 by Sir Alexander Binnie, and such other further works as may be necessary for preventing the storm floodings in the whole of the boroughs north of the Thames." Further, it was decided that the members of the conference, with the addition of delegates from other Borough Councils north of the Thames, should seek an interview with the new County Council as early as convenient after the March election. The Mayor of Paddington, who was appointed spokesman for the deputation, said he felt very keenly the ruin of poor tenants and the depreciation of property and rents which had been wrought by the long delay in providing adequate main drainage and preventing these periodical floodings of basement premises in so many parts of London north of the Thames.

WAR CORRESPONDENTS' MEMORIAL.—The Institute of Journalists are carrying out the arrangements for placing in St. Paul's Cathedral a memorial to the war correspondents who lost their lives on service in the South African war. The Dean has selected a site for the proposed tablet on one of the arches in the crypt, immediately opposite the memorial to the Soudan correspondents, and next to the Archibald Forbes memorial. Mr. W. Goscombe John, A.R.A., has undertaken to prepare the design.

INCORPORATED CHURCH-BUILDING SOCIETY.—This Society held its usual monthly meeting, on Thursday, the 21st inst., at the Society's house, 7, Dean's-yard, Westminster Abbey, S.W., the Rev. Canon C. F. Norman in the chair. Grants of money were made in aid of the following objects, viz., building new churches at Ben Rhydding, near Ilkley, Yorks., 225*l.*, in lieu of a former grant of 200*l.*; Foulridge St. Michael and All Angels, near Colne, Lancs., 100*l.*, in lieu of a former grant of 55*l.*; Hilderthorpe Emmanuel, near Bridlington, Yorks., 80*l.*, in lieu of a former grant of 40*l.*; Northampton, Christ Church, 200*l.*, and Plymouth St. Augustine, 75*l.*; towards rebuilding the churches at Swinefleet, St. Margaret, Yorks., 40*l.*; and Walthamstow St. James the Greater, Essex, 230*l.*, in lieu of a former grant of 130*l.*; and towards enlarging or otherwise improving the accommodation in the churches at Bettws Evan, St. John, near Newcastle Emlyn, Cardigan, 20*l.*, in lieu of a former grant of 15*l.*; Brandon, St. John, Durham, 50*l.*; Brereton, St. Oswald, near Sandbach, Chester, 25*l.*; and Great and Little Hampton, St. Andrew, near Evesham, Worcester, 35*l.* Grants were also made from the Special Mission Buildings Fund towards building mission churches at Becton-road, Canning Town, near Plaistow, Essex, 35*l.*, and Hordle, near Brockenhurst, Hants., 40*l.* The following grants were also paid for works completed:—Mumby, St. Peter, near Alford, Lincs., 20*l.*; Pockthorpe, St. Mary Magdalene, near Norwich, 100*l.*; Rogiet, St. Mary, near Newport, Mon., 30*l.*; Llanllyfni, St. Rhedyw, near Penygroes, North Wales, 15*l.*; Alwalton, St. Andrew, Peterborough, 15*l.* of a grant of 25*l.*; Godney, Holy Trinity, near Wells, Somerset, 25*l.*; Tremaine, Cornwall, 15*l.*; Tonyrefail, St. David, near Llantrisant, Glamorgan, 130*l.*; Stourton, St. Thomas à Becket, near Bridestowe, Devon, 10*l.*; Badshot Lea, St. George, near Farnham, Surrey, 75*l.*; and Aldersbrook, St. Gabriel, near Wanstead, Essex, 50*l.* In addition to this the sum of 239*l.* was paid towards the repairs of eighteen churches from Trust Funds held by the Society.

RIPON SPA BATHS AND STREET WIDENING.—At theTown Hall, Ripon, on the 21st inst., Mr. R. H. Bicknell, M.Inst.C.E., an Inspector of the Local Government Board, held an inquiry with respect to an application by the Corporation to borrow 2,250*l.* for purposes of street improvements and 5,300*l.* for the erection of baths in Park-street in connexion with the Spa scheme, these amounts having since the application was made been increased respectively to 2,350*l.* and 6,000*l.*

YORKSHIRE FEDERATION OF BUILDING TRADE EMPLOYERS.—The annual dinner of the Yorkshire Federation of Building Trade Employers was held, on the 21st inst., at Hull, under the presidency of Mr. E. Good, Hull. The attendance included the Mayor (Alderman Jarman), the Sheriff (Mr. J. H. Fisher), the ex-Mayor (Sir Alfred Gelder), Mr. F. Bielby (President of the Hull branch), Alderman Larard (Chairman of the Corporation Works Committee), and a large number of the building employers of Hull and the district. Sir Alfred Gelder, in proposing the toast of "The National Association," said he believed the builders had good times before them.—Alderman Jessop (Huddersfield) responded. He said he had no sympathy with Yankee hustling in the building trade.

ELECTRICAL WORKING OF TRAMWAYS.—The Highways Committee of the London County Council reported as follows at Tuesday's meeting of the Council:—"We have to report that the reconstruction for electrical traction of the tramways (*a*) between the Elephant and Castle and Greenwich, *viâ* New and Old Kent roads, New Cross-road, etc., and (*b*) between the Elephant and Castle and New Cross-gate, *viâ* Walworth-road, Camberwell-road, Peckham-road, etc., has been completed, and the Board of Trade has, in the exercise of the powers conferred upon it by the London County Tramways (Electrical Power) Act, 1900, and the London County Council (Tramways and Improvements) Acts of 1901 and 1902, consented to, and approved of, the use of electrical power on those lines. The Board of Trade has also certified that the tramway in Short-street, between Newington-butts and Walworth-road, which has been reconstructed as a double line, under the London County Council (Tramways and Improvements) Act, 1901, and the junction line of Tramway No. 15 from Camberwell-green to Denmark-hill, authorised by the London County Council (Tramways and Improvements) Act, 1902, are fit for public traffic. . . . The tramways between the Elephant-and-Castle and Greenwich, *viâ* New and Old Kent roads, etc., have been opened to the public, but, owing to certain arrangements with reference to the housing of the cars not being yet completed, it has not been found possible to commence the electrical working of the tramways between the Elephant and Castle and New Cross-gate, *viâ* Walworth-road, etc. It is hoped, however, that these lines will be open to the public in the course of a few days. . . ."

HOUSING OF THE WORKING CLASSES.—The Housing of the Working Classes Committee reported as follows at Tuesday's meeting of the London County Council: "On April 29, 1902, we reported that certain factories were about to be erected on a site formed by the junction of Shepherdess-walk and Nile-street, Shoreditch, and that this would involve the displacement of 364 persons of the working classes. We have now to report that twenty-five additional houses, accommodating about 198 persons, have been included in the clearance. Of the total number of persons, 245 have already been, and 317 will shortly be, displaced. Sites are also being cleared for the erection of commercial premises in Scrutton-street and Earl and Clifton streets, Shoreditch, involving the displacement of sixty-nine and 115 persons of the working classes respectively. In the Metropolitan Borough of St. Marylebone, closing orders have been obtained under Part II. of the Housing of the Working Classes Act, 1890, in respect of nineteen two-roomed cottages in Bentinck-court, Portland-town. Of these cottages, five were unoccupied when the closing orders were obtained, and the remaining fourteen were occupied by seventy-three persons. In the Metropolitan Borough of Finsbury nine houses in Providence-place, Baker's-row, inhabited by forty-eight persons, have been closed by the owner on account of their insanitary condition. Displacements have also been made by the War Office in Artillery-place and the adjacent streets in Woolwich for the purposes of erecting quarters for married soldiers. The total number of persons displaced was 468, of whom 278, occupying sixty houses, were of the working classes. We are informed that no great difficulty has been experienced in finding accommodation for the persons displaced. . . . We have to report that the whole of the cottages on section A of the Totterdown Fields estate, comprising eleven first, sixty-six second, 151 third, and sixty-four fourth class cottages, have been completed, and, with the exception of two, are now in occupation. We have ascertained that 129 of the 289 tenants in possession on December 31, 1903, were in employment on the north side of the river Thames, which was, no doubt, mainly due to the convenience of the electric tram service. We also ascertained that 107 of the tenants had moved from Wandsworth, thirty-five from Lambeth, thirty-one from Southwark, twenty-seven from Camberwell, twenty-one from Battersea, fourteen from Westminster, and of the remaining fifty-four thirty came from other Metropolitan boroughs, and twenty-four from various places outside the County of London."

DUBLIN MASTER BUILDERS' ASSOCIATION.—The annual general meeting of the Master Builders' Association was held at the Grosvenor Hotel, Westland-row, recently, when the following officers were elected for 1904:—President, James Beckett; Vice-President, James Kier-

nan; Committee, R. Denne Bolton, Thomas Connolly, J. E. Foley, Thomas Mackey, Wm. Meade, H. Pemberton, E. W. Warren, and B. W. Whyte; Hon. Secretary, John Good, 55, Great Brunswick-street, Dublin. The date of the annual dinner was fixed for February 11 next, at the Antient Concert Rooms.

SLATE TRADE.—The year 1903 was a prosperous one for the slate trade, prices being the highest ever reached, and prospects for the present year are good, especially with the export trade. There was a large increase in the importation of foreign slates (principally from the French ports), amounting to about 400,000*l.* worth, as compared with 286,000*l.* worth the previous year, but the increasing supply of superior quality of Welsh slates will soon displace them. The owners of quarries on the Bangor and Festiniog veins are in much the same position as the South Wales steam coal owners, having practically a monopoly of a product superior to any other in the market. The introduction of electric power by the North Wales Power Company will help to lower the cost of working. A few quarries have changed hands, and new companies been formed, as the present state of trade is bound to attract investors. Little is, however, heard of the profits of the slate trade, as the best paying quarries are in the hands of private owners or companies, the shares of which are not quoted.

Legal.

WEST END ANCIENT LIGHT DISPUTE.

THE case of Godson and others *v.* Robinson and others came before Mr. Justice Farwell in the Chancery Division last week, the hearing having concluded on the 23rd inst.

This was an action for an injunction restraining the defendants, their servants and agents, from erecting any building on the site of No. 5, Stafford-street, Piccadilly, in such a manner as to darken, injure, or obstruct any of the ancient lights or windows of the plaintiffs' house, No. 16, Dover-street, Piccadilly, as the same were enjoyed prior to the demolition of the old building, and for a mandatory order to pull down so much of the building as was erected above the height of the old building, and for damages.

Mr. Upjohn, K.C., and Mr. H. C. Wright appeared for the plaintiffs; and Mr. C. E. Jenkins, K.C., and Mr. J. Rolt for the defendants.

The first plaintiffs are the owners of No. 16, Dover-street, and Mrs. E. Betty, the third plaintiff, is the lessee of the premises, where she carries on the business of a milliner and dressmaker on the first, second, and third floors. At the rear of the premises, viz., on the south-eastern and north-eastern sides, there was an open area, and this open area was bounded on the north-western and south-western sides by the walls of No. 16, Dover-street, and on the south-eastern side was bounded throughout by the outside wall of No. 5, Stafford-street. The surface of the area was held with No. 16, Dover-street, and, as to the ground part, consisted of a flat forming the roof of the basement of that house, but at the south-western end was open to the basement. There were a number of windows in the rear of No. 16, Dover-street, looking towards the defendants' building, and all these windows were ancient lights, and received light over No. 5, Stafford-street, which had been the case without interruption and free from obstruction, except from the building which formerly stood there. The defendants Robinson and Fisher were the owners of No. 5, Stafford-street, whilst Smith was the contractor for the new building. The old building had been demolished, and a new building put up higher than the old building, and with chimney stacks which, it was alleged, obstructed the plaintiffs' lights as hitherto enjoyed. It was further alleged that, having regard to Mrs. Betty's business, the diminution of light was of serious importance to her, and the result of the erection of the defendants' building had already been to render the plaintiffs' building less commodious and convenient for business.

The defendants, by their defence, admitted that the plaintiffs' windows were ancient lights. They denied the other allegations of the plaintiffs, affirming that their new building did not obstruct the light entering the plaintiffs' premises. Defendants further said that, prior to the commencement of their new building, plans and drawings were submitted on behalf of the defendants to, and approved by, the surveyor and agents of the plaintiffs, and plaintiffs allowed the building to proceed with full knowledge and notice of the nature and details of the building. In these circumstances the defendants said that plaintiffs were not entitled to any relief, or a mandatory order.

Technical evidence was given for the plaintiffs by Professor Elsey Smith and Mr. W. Newton Down, and for the defendants expert evidence was given by Mr. Treadwell and Mr. Worley.

In the result, his Lordship, in giving judgment, said he did not consider the obstruction of a serious nature, and that damages would meet the justice of the case. He awarded the plaintiffs 150*l.* damages, viz., 100*l.* to the reversioners and 50*l.* to the tenant, with half costs.

HARROGATE BUILDING DISPUTE.

THE case of the Mayor and Corporation of Harrogate *v.* Dickinson came before the Court of Appeal, composed of the Lord Chief Justice, the Master of the Rolls, and Lord Justice Romer, on the 22nd inst., on the appeal of the defendant from a judgment of Mr. Justice Wright, sitting without a jury, in the King's Bench Division.

From the special case stated, it appeared that the defendant was a builder who owned a plot of land in Walker-road and Bilton-drive, Harrogate. On October 1, 1894, he deposited plans showing eleven dwelling-houses and two stables and coach-houses proposed to be erected by him on the plot of land referred to. These plans, which were contained on one sheet, were approved on October 8, 1894, and certificates were given in respect of certain of the houses which were built. Section 27 of the Harrogate Corporation Act, passed on August 24, 1893, provided: "The deposit with the Corporation of any plan of any street or building shall be null and void if the execution of the work specified in such plan be not commenced within the following periods—that is to say, as to plans deposited after the passing of this Act within three years from the date of such deposit, and as to plans deposited before the passing of this Act within three years from the passing of this Act; and, at the expiration of these respective periods, fresh notice and deposits shall, unless the Corporation otherwise determine, be requisite." On January 3, 1902, defendant commenced to build the second stable and coach-house, and on the 18th the inspector employed by the Corporation gave him notice that he was to discontinue building and deposit fresh plans, the old ones not complying with the new by-laws in several particulars. The defendant's case was that, subject to the section of the Act of 1893, he was entitled to continue to build under the by-laws which were in force at the time when the plans were passed, because of the last clause of the new by-laws, clause 117, which said that from and after the date of the confirmation of the new by-laws all by-laws relating to new streets and buildings were repealed, except as regarded any work commenced before the date of the confirmation, or any work not so commenced, but of which plans had been either approved before that date or had been sent to the Surveyor one month before such date and not disapproved by the Council. Mr. Justice Wright held that what the Council had had before them were several plans, and not one plan, and that section 27 of the Act of 1893 expressly provided that deposited plans became null and void after three years. As regarded the particular houses now in question, the three years having been allowed to lapse without anything being done upon them, judgment must be entered for the plaintiffs. From this decision the defendant now appealed.

Mr. Colefax appeared for the appellant, and Mr. Danckwerts, K.C., and Mr. Wm. Mackenzie for the respondents.

Without calling upon counsel for the respondents, their lordships affirmed Mr. Justice Wright's decision on all points, and dismissed the appeal, with costs.

PATENTS OF THE WEEK.

APPLICATIONS PUBLISHED.*

23,960 of 1902.—L. H. RANSOME: *Wood-boring Machines.*

This consists in making the top bracket or brackets of wood-boring machines carrying the boring spindle or spindles to slide on balls, thereby reducing to a minimum the labour required to traverse and bring the spindle into its required position.

3106 of 1903.—W. K. KAYE: *Locks for Asylums and other Public Institutions.*

In carrying out this invention, the striking-plate is so constructed that one side of the frame—that is to say, the side in the direction in which the door opens—is attached to the main body of the same either by wedge-shaped catches or by one edge of the said removable part sliding in a groove, a catch holding the removal part in position. An electro-magnet or magnets are arranged in connection with the before-mentioned catches in such a manner that on completing the circuit by the operating of the switch of a lock or a series of locks, the removable part of the striking plate will fall bodily away, or slide downwards, on the application of ordinary pressure to the door.

4421 of 1903.—H. T. DAVIDGE: *Locks and Keys for Doors, Cupboards, and the like.*

This relates to a lock, comprising a locking-bolt actuated by a follower and handle secured in the locked and unlocked positions by means of spring-controlled sliders or tumblers, the gates of which are brought into register with a stump on the bolt when it is desired to actuate the bolt by means of a key.

5248 of 1903.—E. G. HARCOURT: *Cupboard and like Fastening Devices.*

This invention relates to cupboard and like fastening devices, particularly to the type known as "cupboard turns," the object being to provide the means for locking the tongue part to the handle stem or shank. The means aforesaid comprise, in combination with the tongue part itself, a slide adapted to engage or embrace the handle stem or shank for preventing rotation of the same independently of the tongue.

7362 of 1903.—E. ENGELS: *Method and Apparatus for supplying Fuel to Stoves or Fireplaces.*

This consists in the combination of a grate, a fuel support below the grate, means to feed the fuel into the grate, and means for preventing excessive frictional interference by the lateral pressure of the fuel.

7788 of 1903.—J. JETON: *Holders for Windows, Fanlights, Doors, and the like.*

This consists in the combination with a fixed member and a hinged member, of a support attached to each of said members, a holding bar pivotted to the fixed member support, and adapted to slide in the hinged member support, and provided with apertures and a ball race, a spring pressed ball arranged in said hinged member support, and adapted to enter said apertures and the race, a spring in connection with the holding bar, and bearing on the support of the hinged member to close the latter, and a rod adapted to guide said spring.

22,489 of 1903.—W. BETTIS: *Revolving Cowls for Chimney Pots and the like.*

This invention relates to revolving cowls for chimney pots and the like, and has for its object the prevention of downdraught, thereby obviating the annoyance experienced in a room where such occurs. This object is attained by an improved form or shape of vanes used in the construction of the fan or revolving cowl. In carrying the invention into effect, an oil-retainer provided at its upper end, with a bush, is formed to act as a side support to a spindle that is pivotally mounted and kept in position by a set screw which fits into a groove formed in the spindle. On the said spindle is fixed a boss provided with arms or extensions as a means for carrying vanes which are fixed thereto. The said vanes are formed more or less with one of the outer triangular corners extending upwards in a gradual curve, while the other outer corner is finished off with a more or less small semi-circular curve. To enable a revolving-cowl and bearing as above described to be attached to a chimney pot, a flat bar of metal of sufficient length to stretch across the top of the chimney pot is secured to the lower end of the oil-retainer, and to the said bar are attached by any suitable means, thin, pliable strips of metal capable of being bent over the top and down on the outside of a chimney pot, and secured thereto by means of wire bindings.

25,126 of 1903.—T. W. PATSON: *Hasp Locks.*

A hasp lock, in which the bolt is normally held by a spring in a position to engage the hasp loop while it can be drawn back to release the loop by sliding the nozzle, which, in the interior of the lock carries a nozzle plate, so that a tooth thereon engages in the forward end of an additional slide plate, which latter engages in a pin projecting from the bolt plate and draws back the bolt, while, at the same time, by the operation of the key passed through the nozzle, the bolt may be slidden beyond its normal position to pass entirely through the hasp loop by the key lifting the ordinary lock levers out of engagement with the bolt plate and sliding the bolt, one of the levers lifting the forward end of the slide plate, which is simultaneously slidden with the lock plate, so that a rearward notch in the slide plate engages the teeth of the nozzle plate and prevents the nozzle being slidden by reason of the lock levers descending and bringing with them the slide plate, so holding the locking bolt in its fastening position.

*All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

2467 of 1903.—J. JACKSON: *Columns Supports, Bearers, or Stanchions, and the like.*
This invention has for its object to obtain the full advantage of the higher resistance to crushing strains of cast iron, while, at the same time, obviating the risk due to hidden flaws, inequal contraction, displaced cores, and unnecessary weight in tubular or other cast columns and stanchions. To form these columns, wrought iron or mild steel of channel or other section is taken, and by means of rivets or bolts, cast iron so affixed thereto of any section or shape which may have caps, bases, brackets, and the like cast thereon, or the same may be affixed thereto by means of rivets, bolts, screws, or the like.

4005 of 1903.—C. GOULD and J. H. SUTTON: *Ventilators.*
Ventilators for buildings of all kinds, consisting of a series of shutters, having extended parts, said shutters being pivotally attached within a frame of sheet steel or other metal, or material by pivots or snugs, or rods, said shutters being provided with quadrant ends integrally a part of or attached to same, a lever rod or bar attached to said quadrants, and situated above one or both ends of each shutter, said shutters forming a series to be manipulated by a lever handle, or by a finger-piece simultaneously relative to the opening and closing of same.

4215 of 1903.—T. DAWBER: *Lubricating Rollers for Brick-making Machinery.*
A lubricating roller for brick-making machinery, consisting of a central hollow supporting piece, in combination with a periphery formed of one or more layers of porous material and a stiff, perforated sheet as a support for same.

4457 of 1903.—E. B. ELLINGTON: *Hydraulic Lifts.*
Apparatus for operating a hydraulic lift, in which the main valve is controlled by a rope or ropes outside the lift, the controlling rope or ropes being moved by means of a lever inside the lift connected to a rocking yoke moving with the lift, and carrying one or more pulleys, round which the controlling rope or ropes pass.

6505 of 1903.—E. HOMAN: *Fireproof Floors, Ceilings, or the like.*
A fireproof structure, consisting of a series of girders or the like, arranged parallel to one another, and having holes formed in the ropes thereof at suitable intervals, a series of tie bars or rods passed loosely through the holes, said tie bars being of a length to extend across a group of two or more adjacent girders and project beyond the same into adjacent bays or spaces, and alternately arranged across every group of girders, and embedded in a filling of concrete embracing the tie bars and the girders.

9476 of 1903.—F. BIRD: *Ventilating Columns for Sewers and the like.*
This invention relates to ventilating columns for sewers and the like, and refers more particularly to a form and arrangement of "rust pans," which are mounted within the base of the column as follows: Within the base of the ventilating column is formed a suitable chamber of sufficient depth beneath the ground line to enable the handle of the rust pan, resting upon the floor, to be readily reached from the manhole, which is fitted with a door or cover fastened to the wall of the column by set screws, and rendered air-tight by means of an indiarubber or like washer. To ensure a clear and uninterrupted air way, the shape of the rust pans are such as to form to the interior contour of the chamber, and that the lower one is placed in line with, but below, the opening connecting with the sewer. The upper rust pan is fitted with lugs, and held in position by two hooks inserted in, cast with, or fastened upon the wall of the chamber, but so that, while part of it projects over the lower pan, and thus ensures the collection of the whole of the rust, dirt, or other *debris*, the required area of the air way from the sewer is preserved.

20,822 of 1903.—P. M. WALKER and E. BARSDORF, trading as P. M. WALKER AND CO.: *Ventilators.*
The ventilator is formed with a round, square, or other suitable shape of base, and situated round the uptake is arranged a number of curved plates or vanes, partly corresponding in section with the said uptake. The sides of these vanes curve outwardly, leaving a space or outlet between each pair of vanes, and where four vanes are used there are four of there outlets, occupying quadrangular positions. A V-shaped vertical mid-feather is placed in each of the aforesaid spaces, having wings at their bases curving outwards; the spaces between the conical sides of this mid-feather and the curved sides of the vanes serve as air passages. Upon each side of these air outlets is placed suitable deflecting fans, and across these outlets, but at a suitable distance beyond, suitable curved baffle-plates are erected.

22,995 of 1903.—H. X. SPILLMANN: *Apparatus for indicating and recording the level or contour of roads and the like.*
A level or contour indicating or recording apparatus for use in a vehicle or the like, of which a device connected with a registering-pin is pivotally applied to the vehicle in such a manner that at the movement of the vehicle it can automatically retain its original position relatively to two axes drawn through a point of the latter, of which one is perpendicular and one is parallel to the direction of the wheel axle, and, further, in which means are provided for causing a registering or recording band to travel in front of the registering-pin, according to the amount of road or distance passed over by the vehicle in such a manner that said pin can press on such band and form a curve showing the difference in height or contour of the road traversed.

23,132 of 1903.—R. AMES: *Tiles for the Floors of Bacteria Beds and other Filter Beds.*
Tiles for forming the floors of filter beds for various purposes, consisting of arched or other suitably-shaped block or foot, or feet, made integral with, and supporting, a rectangular flat top, the edges of which project beyond the said block or foot, and are corrugated or wavy in outline so as to form drainage channels between each adjacent tile when in use.

25,160 of 1903.—J. G. WOLF: *Paving Block or Setts for Use along the Rails of Tramways.*
A paving block, made of natural stones, broken stones, or quarry stones and cement, beton or concrete, consisting in the arrangement of iron or steel banding around lateral faces of the block and of an angle iron disposed over an upper edge of the block and secured to one or more of the iron or steel bands, for use along the rails of tramways.

25,321 of 1902.—R. MCALPINE: *Composition of Building Blocks, Slabs, and the like.*
The manufacture of building blocks, slabs, and the like, consisting in incorporating and mixing steel slag with Portland cement and other cement.

25,652 of 1903.—R. WUNSCH: *Artificial Stone Girders, and the like.*
The upper and lower flanges of the girder are provided with longitudinal cores, made of round iron bars or of angle or other iron, a frame, consisting of iron bars of any desired cross section, arranged correspondingly close to each other, being inserted between the two cores. The girder may be of single or double T-cross section, but at certain intervals it is supplemented or thickened so as to form blocks flush with the flanges. The vertical faces of these block-shaped girder portions are provided with offsets, in such a manner that when the girders are placed side by side the left hand offset of one girder comes to lie on the right hand side offset of the adjoining one. These thickened portions, or blocks of the girders, are also provided with holes, in which, after the girders have been put in place, are introduced rods or bars so that, when girders, according to this invention, are used, a structure is obtained which acts as if it were made of a single plate.

THE LOCAL GOVERNMENT ANNUAL FOR 1904.—This excellent little work (edited by Mr. S. Edgecumbe Rogers, and published at 1s. 6d., at 27a, Farringdon-street, E.C.) is the thirteenth annual publication. The directory portion gives the names and addresses of the chief officials of all Corporations, London Borough Councils, County Councils, Boards of Guardians, Urban and Rural District Councils, County and Borough Asylums, &c., throughout the kingdom, as well as the public libraries, public parks, and City companies of London. A feature which will be found useful is the insertion of the names of the Chairmen of Committees in the Metropolitan Boroughs, also the Chairmen of the London County Council Committees. The names and addresses of the members of the Metropolitan Water Board, and a full list of the various Education Committees in England and Wales have been included. In addition to the directory, there is much useful information relating to the public libraries, baths, and washhouses, and electric light undertakings in the boroughs of London. The charges for water and gas in London are shown, the population of the various provincial unions is given, and there is also a list of all the parks and open spaces of the Metropolis, with the local authorities controlling them.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

January 14.—By ELSWORTH & KNIGHTON.

Chiswick.—13, 15, 17, 19, 29, 31, and 33, Annandale-rd., u.t. 75 yrs., g.r. 44*l.* 2s., w.r. 291*l.* 4s.	£2,100

By NEWBON, EDWARDS, & SHEPHARD.

Highbury.—115, Green Lanes, u.t. 45½ yrs., g.r. 16*l.*, y.r. 100*l.*	730
Holloway.—57 and 59, Landseer-rd., u.t. 59 yrs., g.r. 8*l.* 8s., y.r. 60*l.*	545
Finsbury Park.—7, Woodberry-gr., u.t. 59 yrs., g.r. 9*l.* 9s., e.r. 60*l.*	495

By T. D. PEACEY.

Clerkenwell.—38 and 39, Wharton-st., u.t. 25 yrs., g.r. 8*l.*, y.r. 96*l.*	575
Hampstead.—5, Provost-rd., u.t. 44½ yrs., g.r. 5*l.*, e.r. 60*l.*	545

By VARLEY & LOCKING.

Dalston.—90, Forest-rd., u.t. 47 yrs., g.r. 6*l.* 10s. e.r. 45*l.*	390
Hackney.—373, Hackney-rd., and 1, Garner-st., u.t. 12½ yrs., g.r. 5*l.* 6s., w.r. 73*l.* 4s.	200

January 19.—By PERCY H. CLARKE.

Fulham.—9, Musgrave-cres., u.t. 63 yrs., g.r. 2*l.* 5s. 6d., y.r. 32*l.*	400
Peckham.—22, Choumert-rd. (s.), u.t. 38½ yrs., g.r. 5*l.*, y.r. 45*l.*	565

By S. H. DAVIDS & Co.

Enfield Highway.—Market-pl., f.g. rents 13*l.*, reversion in 84 yrs.	315
Hampton Hill, Middlesex. — Uxbridge-rd., "Waybourne." f., y.r. 45*l.*	600

By DEBENHAM, TEWSON, & Co.

East Ham.—Ernald-av., f.g. rents 70*l.*, reversion in 94 yrs.	1,560

By RUTLEY, SON, & VINE.

Euston-road.—29, George-st., f., w.r. 114*l.* 8s. 37, Stanhope-st., u.t., 53 yrs., g.r. 30*l.* y.r. 54*l.*	1,230 250
Regent's Park.—2, Longford-st. (factory), area 1,800 ft., u.t. 53 yrs., g.r. 20*l.*, y.r. 100*l.*	1,800
Hampstead-road.—15, Ampthill-sq., u.t. 39 yrs., g.r. 12*l.* y.r. 80*l.*	615
Camden Town.—221 and 223, Camden-rd., u.t. 32 yrs., g.r. 10*l.*, y.r. 120*l.*	830
272, Camden-rd., u.t. 39 yrs., g.r. 6*l.*, y.r. 97*l.* 10s.	750

By TOMKINS & CAPPER (at Abergavenny).

Raglan, Mon.—"The Pant Farm," 78 a. 2 r. 23 p., f., y.r. 70*l.*	1,620
Penrhos, Mon.—"Upper Clawdd Farm," 32 a., f., y.r. 40*l.*	875
Llanbedr, Brecon.—"Draen" and "Tyr Bach Farms," 56 a. 1 r. 10 p., f., y.r. 33*l.*	730
Abergavenny, Mon.—26, Lion-st., f., y.r. 32*l.*	580

January 20.—By FOSTER & CRANFIELD.

City of London.—42, Finsbury-sq. (Offices), area 4,050ft., u.t. 14 yrs., g.r. 283*l.* 3s., y.r. 770*l.*	2,000

By FURBERS'.

Holloway.—Holloway-rd., f.g.r. 44*l.*, reversion in 59 yrs.	1,310
Witley-rd., f.g.r. 10*l.*, reversion in 59 yrs.	265

By E. & S. SMITH.

Clerkenwell.—15, Percy-circus, u.t. 29 yrs., g.r. 7*l.*, y.r. 110*l.*	760
Holloway.—29, Hilldrop-cres., u.t. 45 yrs., g.r. 8*l.*, y.r. 55*l.*	500

By DOUGLAS YOUNG & Co.

Notting Hill.—70, Cambridge-gdns., u.t. 60 yrs., g.r. 8*l.*, e.r. 80*l.*	780
South Lambeth.—36 and 37, Kenchester-st., w.r. 72*l.* 16s.; also l.g.r. 9*l.*, u.t. 51 yrs., g.r. 12*l.*	590

By FLEURET, SONS, & ADAMS (at Masons' Hall Tavern).

Brighton.—St. Catherine's-ter., "The Sussex Hotel," f., p.	15,000
West-st., "The Carpenter's Arms" p.h. (Christie's), f., p.	8,000

January 21.—By H. J. BLISS & SONS.

Bromley-by-Bow.—90 and 92, Fern-st., f., w.r. 62*l.* 8s.	525
Bow.—72, St. Stephen's-rd., u.t. 22½ yrs., g.r. 5*l.*, w.r. 32*l.* 10s.	105
157, 159, and 163, Tredegar-rd. (s.), y.r. 110*l.*; also l.g.r. 5*l.* 5s., u.t. 59 yrs., g.r. 16*l.* 16s.	1,025
Bromley-by-Bow.—19 and 20, Franklin-st., u.t. 48½ yrs., g.r. 8*l.*, w.r. 57*l.* 4s.	300

By FISHER, STANHOPE, & DRAKE.

Stoke Newington.—38, Cazenove-rd., u.t. 73 yrs., g.r. 9*l.* 9s., e.r. 60*l.*	530
Stamford Hill.—15, Dunsmure-rd., u.t. 80 yrs., g.r. 10*l.*, e.r. 60*l.*	620

By C. C. & T. MOORE.

Bow.—17, St. Stephen's-rd., u.t. 50 yrs., g.r. 4*l.*, y.r. 28*l.*	320

By NEWBON, EDWARDS, & SHEPHARD.

Stoke Newington. — 236, High-st. (s.), u.t. 70 yrs., g.r. 13*l.*, y.r. 150*l.*	1,900
Whitechapel.—11, Brady-st., part f. and part u.t. 53½ yrs., g.r. 25*l.*, y.r. 110*l.*	1,500
Stratford.—Angel-la., f.g.r. 150*l.*, reversion in 61 yrs.	4,150
Commercial-road East.—St. George's-ter., f.g. rents 75*l.*, reversion in 57 yrs.	1,800
Highbury.—12, 14, 16, and 18, Aubert-pk., u.t. 77 yrs., g.r. 33*l.* 4s., y.r. 184*l.*	2,015
Canonbury.—1, Canonbury-pk. (s.), u.t. 32½ yrs., g.r. 10*l.*, e.r. 80*l.*	445
Holloway.—61, St. John's-rd., u.t. 71½ yrs., g.r. 6*l.* 10s., y.r. 37*l.*	400

By STIMSON & SONS.

Clapham.—125, Dorset-rd., f., p.	315
127, 129, 133, to 145 (odd), Dorset-rd. (s), f., y.r. 259*l.*	3,055
1, Hannah-pl., f., w.r. 15*l.* 12s.	125
2 and 3, Palfry-pl., f., w.r. 44*l.* 4s.	430
183 and 185, Wirtemburg-st., f., w.r. 85*l.* 8s.	1,190
1 to 19 (odd), Chip-st., f., w.r. 249*l.* 4s.	3,305
Mile-end.—Burdett-rd., f.g. rents 77*l.* 5s., reversions varying from 43 to 46 yrs.	2,585
Highbury. — 65, Highbury New-pk., u.t. 45½ yrs., g.r. 15*l.*, e.r. 120*l.*	810
Battersea.—36, 38, and 40, Knowsley-rd., u.t. 65½ yrs., g.r. 10*l.* 10s., w.r. 71*l.* 10s.	500
Deptford.—3 and 4, Wotton-rd., u.t. 39½ yrs., g.r. 4*l.* 6s., w.r. 88*l.* 8s.	480

RECENT SALES.—*(continued)*.

Greenwich.—36, 38, and 40, Church-st. (s.), f., y.r. 88*l.* 4*s.* 500
Caledonian-road.—8 and 10, Gifford-st., u.t. 40½ yrs., g.r. 12*l.*, e.r. 72*l.* 510

By G. TROLLOPE & SONS.

New Bond-street.—No. 93 (s.), Corporation Lease, g.r. 5*l.* 12*s.* 6*d.*, renewal fine 39*l.* 7*s.* 6*d.*, p. 9,400

January 22.—FIELD & SONS.

Marylebone.—Shroton-st., "The Perseverance" p.h., a profit rental of 23*l.* for 47½ yrs.... 400
Plaistow.—58 to 68 (even), Valetta-gr., u.t. 82 yrs., g.r. 18*l.*, w.r. 126*l.* 2*s.* 855

By JONES, LANG, & Co.

Hammersmith.—Hammersmith-rd., i.g. rents 90*l.*, u.t. 65½ yrs., g.r. 3*l.* 1,790
Auriol-rd., i.g. rents 60*l.*, u.t. 65½ yrs., g.r. 4*l.* 1,150

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beer-house; p.h. for public-house; o. for offices; s. for shops; ct. for court.

MEETINGS.

FRIDAY, JANUARY 29.

Royal Institution.—Mr. D. G. Hogarth, M.A., on "The Marshes of the Nile Delta." 9 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. A. P. Head on "Metallurgy as Applied in Engineering." 8 p.m.

Institution of Mechanical Engineers (Extra Meeting).—Discussion upon the following paper to be continued: "Sixth Report to the Alloys Research Committee on the Heat Treatment of Steel," by the late Sir Wm. C. Roberts-Austen, K.C.B., F.R.S., completed by Professor William Gowland. 8 p.m.

Glasgow Architectural Craftsmen's Society.—Mr. W. G. Peddie on "Comparison of Building Practices in Scotland." 8 p.m.

MONDAY, FEBRUARY 1.

Royal Institute of British Architects.—(1) To announce the name of the person the Council propose to submit as a fit recipient of the Royal Gold Medal 1904. (2) The President, Mr. Aston Webb, R.A., to deliver an address to students. (3) Mr. James S. Gibson to read a criticism of the works submitted for the prizes and Studentships 1903-1904. (4) Presentation of prizes by the President. 8 p.m.

Regent-street Polytechnic (University Extension Lectures).—Professor Vivian B. Lewes on "The Chemistry of Air, Fire, and Water." I. 8 p.m.

London Institution.—Mr. J. D. McClure on "The Measurement of the Heavens." Illustrated. 5 p.m.

South-Western Polytechnic, Manresa-road, Chelsea.—Mr. H. T. Scoble will open a debate on "Industrial Decentralisation." 8 p.m.

Institute of Sanitary Engineers, Ltd.—Examination and Literary Committee. 4 p.m.

Liverpool Architectural Society (Incorporated).—Mr. Henry Tanner, jun., on "Interior Woodwork in England." 6 p.m.

Bristol Society of Architects.—Paper by Professor Beresford Pite. 8 p.m.

TUESDAY, FEBRUARY 2.

Institution of Civil Engineers.—(1) Paper to be further discussed: "The Sanding-up of Tidal Harbours," by Mr. A. E. Carey. (2) Time permitting, paper to be read: "Tonnage Laws, and the Assessment of Harbour Dues and Charges," by Mr. H. H. West, 8 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Dr. E. J. Steegmann on "Elementary Physics." I. 7 p.m.

Institute of Sanitary Engineers, Ltd. (Lectures in Practical Sanitary Science).—Mr. B. R. Tucker on "Heating and Hot Water Supply to Buildings." 7 p.m.

WEDNESDAY, FEBRUARY 3.

Royal Archæological Institute of Great Britain and Ireland.—The Rev. J. C. Cox, F.S.A., on "The College of Fotheringhay, from Original Documents." 4 p.m.

Institution of Civil Engineers.—Students' visit to the Plumstead Electricity and Destructor Station. Train from Charing Cross Station to Plumstead, 1.32 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Dr. E. J. Steegmann on "Elementary Physics." II. 7 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the members. 8 p.m.

Institute of Sanitary Engineers, Ltd.—(1) General Purposes and Finance Committee. 4 p.m. (2) Mr. S. L. Bartholomew on "Underground Conveniences." 7 p.m.

Society of Arts.—Mr. Thomas Clarkson, M.I.Mech.E., on "Steam Cars for Public Service." 8 p.m.

THURSDAY, FEBRUARY 4.

Society for the Encouragement of the Fine Arts.—Mr. H. Beaumont on "Chartres and its Cathedral," with lantern illustrations. 8 p.m.

FRIDAY, FEBRUARY 5.

Architectural Association.—Mr. W. A. Harvey on "Cottage Homes." 7.30 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Dr. E. J. Steegmann on "Elementary Chemistry." I. 7 p.m.

SATURDAY, FEBRUARY 6.

Sanitary Inspectors' Association.—Twenty-first Annual Dinner, Venetian Chamber, Holborn Restaurant. 6.30 p.m.

Sanitary Institute (Demonstrations for Sanitary Officers).—Inspection at Charing Cross Hospital New Buildings. 2.15 p.m.

Incorporated British Institute of Certified Carpenters.—Monthly meeting, Carpenters' Hall. Mr. W. Middleton will open a discussion upon "Failures in Carpentry and Joinery." 6 p.m.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Hard Stocks	1 16 0	per 1000 alongside, in river.
Rough Stocks and Grizzles	1 13 0	" " "
Facing Stocks	2 12 0	" " "
Shippers	2 10 0	" " "
Flettons	1 10 0	" at railway depôt
Red wire Cuts	1 13 0	" " "
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing	5 0 0	" " "
Best Blue Pressed Staffordshire	4 4 0	" " "
Do. Bullnose	4 10 0	" " "
Best Stourbridge Fire Bricks	4 8 0	" "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	13 0 0	" " "
Headers	12 0 0	" " "
Quoins, Bullnose, and Flats	17 0 0	" " "
Double Stretchers	19 0 0	" " "
Double Headers	16 0 0	" " "
One Side and two Ends	19 0 0	" " "
Two Sides and one End	20 0 0	" " "
Splays, Chamfered, Squints	20 0 0	" " "
Best Dipped Salt Glazed Stretchers and Headers	12 0 0	" " "
Quoins, Bullnose, and Flats	14 0 0	" " "
Double Stretchers	15 0 0	" " "
Double Headers	14 0 0	" " "
One Side and two Ends	15 0 0	" " "
Two Sides and one End	15 0 0	" " "
Splays, Chamfered, Squints	14 0 0	" " "
Second Quality White and Dipped Salt Glazed	2 0 0	" less than best.

	s. d.	
Thames and Pit Sand	7 3	per yard, delivered.
Thames Ballast	6 0	" "
Best Portland Cement	29 0	per ton, "
Best Ground Blue Lias Lime	20 6	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fire Clay in sacks 27s. 6d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms depôt	1 8½	" "
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf	2 2½	" "

	s. d.	
Ancaster in blocks	1 11	per ft. cube, deld. rly. depôt.
Beer in blocks	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks	2 4	" "
Red Corsehill "	2 5	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "

YORK STONE—*Robin Hood Quality.*

	s. d.	
Scappled random blocks	2 10	per ft. cube, deld. rly. depôt.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per foot super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
HARD YORK—		
Scappled random blocks	3 0	per ft. cube "
6 in. sawn two sides, landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides Ditto	3 0	" "
3 in. sawn two sides slabs (random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "
Hopton Wood (Hard Bed) in blocks	2 3	per ft. cube.
" 6 in. sawn both sides landings	2 7	per ft. super. deld. rly. depôt.
" 3 in. do.	1 2½	" "

SLATES.

in. in.	£ s. d	
20 × 10 best blue Bangor	13 2 6	per 1000 of 1200 at r. d.
20 × 12 "	13 17 6	" "
20 × 10 best seconds "	12 15 0	" "
20 × 12 " " "	13 10 0	" "
16 × 8 best " "	7 0 0	"
20 × 10 best blue Portmadoe	12 12 6	" "

SLATES—*(continued)*—

in. in.	£ s. d	
16 × 8 best blue Portmadoc	6 12 6	" "
20 × 10 best Eureka unfading green	15 2 6	" "
20 × 12 best Eureka unfading green	17 2 6	" "
18 × 10 " "	12 10 0	" "
16 × 8 " "	10 5 0	" "
20 × 10 permanent green	11 10 0	" "
18 × 10 " "	9 10 0	" "
16 × 8 " "	6 10 0	" "

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000 at rly. depot.
Hip and Valley tiles	3 7	per doz. " "
Best Broseley tiles	50 0	per 1000 " "
Do. Ornamental tiles	52 6	" " "
Hip and Valley tiles	4 0	per doz. " "
Best Ruabon red, brown or brindled do. (Edwards)	57 6	per 1000 " "
Do. Ornamental do.	60 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3 0	" " "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 " "
Do. Ornamental do.	54 6	" " "
Hip tiles	4 1	per doz. " "
Valley tiles	3 8	" " "
Best "Rosemary" brand plain tiles	48 0	per 1000 " "
Best Ornamental tiles	50 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3 8	" " "
Best "Hartshill" brand plain tiles, sand faced.	50 0	per 1000 " "
Do. pressed	47 6	" " "
Do. ornamental, do.	50 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3 6	" " "

WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	15 10 0	16 10 0
Deals: best 3 by 9	14 10 0	15 10 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 10 0	12 10 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best
Battens: seconds	0 10 0	" "
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	9 10 0
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	9 10 0
Foreign Sawn Boards— 1 in. and 1½ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4 10 0	5 0 0
Seconds	4 5 0	4 10 0
Small timber (8 in. to 10 in.)	3 12 6	3 15 0
Small timber (6 in. to 8 in.)	3 0 0	3 10 0
Swedish balks	2 15 0	3 0 0
Pitch-pine timber (30 ft. average)	3 5 0	3 15 0
JOINERS' WOOD.		
White Sea: first yellow deals, 3 in. by 11 in.	At per standard. 23 0 0	24 0 0
3 in. by 9 in.	21 0 0	22 10 0
Battens, 2½ in. and 3 in. by 7 in.	17 0 0	18 10 0
Second yellow deals, 3 in. by 11 in.	18 10 0	20 0 0
" " 3 in by 9 in.	17 10 0	19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	15 10 0	16 10 0
Battens, 2½ in. and 3 in. by 7 in.	11 10 0	12 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.	18 0 0	19 10 0
Battens	13 10 0	15 0 0
Petersburg: second yellow deals, 3 in. by 11 in.	16 0 0	17 0 0
Do. 3 in. by 9 in.	14 10 0	16 0 0
Battens	11 0 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 10 0	14 0 0
Do. 3 in. by 9 in.	13 0 0	14 0 0
Battens	10 0 0	11 0 0
White Sea and Petersburg:— First white deals, 3 in. by 11 in.	14 10 0	15 10 0
" " 3 in. by 9 in.	13 10 0	14 10 0
Battens	11 0 0	12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	14 10 0
" " 3 in. by 9 in.	12 10 0	13 10 0
" " battens	9 10 0	10 10 0
Pitch-pine: deals	16 0 0	18 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow Pine—First, regular sizes	33 0 0	upwards.
Oddments	22 0 0	24 0 0
Seconds, regular sizes	24 10 0	26 10 0
Yellow Pine oddments	20 0 0	22 0 0
Kauri Pine—Planks, per ft. cube	0 3 6	0 4 6
Danzig and Stettin Oak Logs— Large, per ft. cube	0 2 6	0 3 6
Small " "	0 2 3	0 2 6
Wainscot Oak Logs, per ft. cube	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 7	0 0 8
¼ in. do. do.	0 0 6½	—
Dry Mahogany—Honduras, Tabasco, per ft. sup. as inch	0 0 9	0 0 11
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 0
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	17 0 0	21 0 0
American Whitewood Planks— per ft. cube	0 4 0	—
Prepared Flooring—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 1 6
1 in. by 7 in. white, planed and shot	0 11 6	0 1 6
1 in. by 7 in. white, planed and matched	0 12 0	0 14 0

WOOD—(*continued*)—

	Per square. £ s. d.	£ s. d.
Prepared Flooring.—(*continued.*) 1¼ in. by 7 in. white, planed and matched	0 14 6	0 16 6
¼ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0	0 13 6
⅝ in. by 7 in. do. do. do.	0 14 0	0 18 0
1 in. by 7 in. white do. do.	0 10 0	0 11 6
1 in. by 7 in. do. do. do.	0 11 6	0 13 6

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	6 5 0 ..	7 5 0
Compound Girders, ordinary sections	8 2 6 ..	9 5 0
Angles, Tees and Channels, ordinary sections	7 17 6 ..	8 17 6
Fitch Plates	8 5 0 ..	8 15 0
Cast Iron Columns and Stanchions including ordinary patterns	7 2 6 ..	8 5 6

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	7 10 0 ..	8 0 0
Staffordshire Crown Bars, good merchant quality	8 0 0 ..	8 10 0
Staffordshire "Marked Bars"	10 10 0 ..	—
Mild Steel Bars	8 15 0 ..	9 5 0
Hoop Iron, basis price	9 5 0 ..	9 10 0
" galvanised	17 10 0 ..	—

(*And upwards, according to size and gauge.)

Sheet Iron (Black)—		
Ordinary sizes to 20 g.	9 15 0 ..	—
" " 24 g.	10 15 0 ..	—
" " 26 g.	12 5 0 ..	—
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes—6 ft. by 2 ft. to 3 ft. to 20 g.	12 15 0 ..	—
Ordinary sizes to 22 g. and 24 g	13 5 0 ..	—
" " 26 g.	14 5 0 ..	—
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	16 0 0 ..	—
" " 22 g. and 24 g.	16 10 0 ..	—
" " 26 g.	18 0 0 ..	—
Galvanised Corrugated Sheets—		
Ordinary sizes, 6 ft. to 8 ft. 20 g	12 15 0 ..	—
" " 22 g. and 24 g.	13 5 0 ..	—
" " 26 g.	14 0 0 ..	—
Best Soft Steel Sheets, 6ft. by 2ft. to 3 ft. by 20 g. and thicker..	11 15 0 ..	—
Best Soft Steel Sheets, 22 g. & 24 g	12 15 0 ..	—
" " 26 g	14 0 0 ..	—
Cut nails, 3 in. to 6 in.	9 5 0 ..	9 15 0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Per ton, in London. £ s. d.	£ s. d.
LEAD—Sheet, English, 3lb. and up	14 5 0 ..	—
Pipe in coils	14 15 0 ..	—
Soil pipe	17 5 0 ..	—
Compo pipe	17 5 0 ..	—
ZINC—Sheet—		
Vieille Montagne ton	26 5 0 ..	—
Silesian	26 0 0 ..	—
COPPER—		
Strong Sheet per lb.	0 0 10½ ..	—
Thin "	0 0 11½ ..	—
Copper nails "	0 0 11 ..	—
BRASS—		
Strong Sheet per lb.	0 0 10 ..	—
Thin "	0 0 11 ..	—
TIN—English Ingots "	0 1 5 ..	—
SOLDER—Plumbers' "	0 0 6½ ..	—
Tinmen's "	0 0 8 ..	—
Plowpipe "	0 0 9 ..	—

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2d. per ft. delivered.
" fourths	1½d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	3½d. " "
" fourths	3d. " "
32 oz. thirds	4½d. " "
" fourths	4d. " "
Fluted sheet, 15 oz.	2½d. " "
" 21 oz.	3½d. " "
½ Harley's Rolled Plate	1½d. " "
⅛ " " "	2d. " "
¼ " " "	2½d. " "

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes or barrels	per gallon	0 1 7
Boiled " " in drums	"	0 1 10
" " in pipes or barrels	"	0 1 10
" " in drums	"	0 2 1
Turpentine, in barrels	"	0 3 10
" in drums	"	0 4 0
Genuine Ground English White Lead	per ton	19 0 0
Red Lead, Dry	"	19 0 0
Best Linseed Oil Putty	per cwt.	0 7 6
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ABERDEEN.—For new church and halls, Queen-street and West North-street, for North U. F. Church congregation. Mr. W. E. Gauld, architect, 258, Union-street, Aberdeen. Quantities by architect:—

Mason: Edgar Gauld, 28, Gilcomston-terrace
Carpenter: Hendry & Keith, 21, Gilcomston-park
Slater: George Farquhar, Union-row
Plasterer: J. Bannochie & Son, Belmont-st.
Plumber: A. B. Robertson & Son, Union-st.
Steel and Iron: W. McKinnon & Co., Spring-gardens
Electric Lighting: Claud Hamilton, Ltd., Union-street
Painter: A. Ferguson & Co., Alford-place
All of Aberdeen. — Total about £8,500

ALNWICK.—For 450 yards of 9 in. main sewerage for Fisher's-lane district, for the Urban District Council. Mr. Geoffrey Wilson, Town Surveyor. Quantities by Surveyor (estimate, £120):—

	£ s. d.
G. Brough	139 10 0
Green Bros.	118 10 0
J. Whinham	112 11 0
McLaren & Co., Embleton, Woodstead, Christon Bank, R.S.O., Northumberland*	73 10 0

CARDIFF.—For the erection of mortuary buildings in Crawshay-lane, Penarth-road, for the Corporation. Mr. W. Harpur, Borough Engineer, Cardiff. Quantities by Borough Engineer:—

	£ s. d.
J. Allan & Son	£1,583 2 3
Lattey & Co.	1,574 13 10
D. Davies	1,453 0 0
A. W. Cadwallader	1,450 17 5
Gough Bros.	1,429 0 0
Geo. Griffiths	1,428 0 0
D. W. Davies	1,382 0 0
F. Bond	1,370 5 8
G. Paltridge	1,369 7 8
F. Small	1,317 0 0
Blacker Bros	1,299 16 0
Knox & Wells	1,297 10 0
C. Beames & Nephew	1,284 15 5
W. Symonds & Co.	1,259 0 0
J. E. Williams	1,251 6 3
Tucker Bros.	1,242 0 0
E. Turner & Sons	1,229 10 6
W. T. Morgan, Cardiff‡	1,200 0 0

‡Recommended for acceptance by Council.

CARSHALTON.—For heating and hot-water supply apparatus, steam and condense mains, water and fire services at Southern Hospital, Carshalton-on-the-Hill, Surrey, for Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer and Surveyor to the Board:—

	£ s. d.
Werner, Pfleiderer, & Perkins, Ltd.	£24,000 0 0
T. S. Knight & Sons	22,500 0 0
Simpson, James, & Co., Ltd.	20,050 0 0
Dargue, Griffiths, & Co., Ltd.	19,983 0 0
Moorwood, Sons, & Co., Ltd.	17,500 0 0
John Metcalf	17,460 5 0
R. Harding & Son	17,370 0 0
Z. D. Berry & Sons	16,956 0 0
G. Fawley & Son, Ltd.	16,361 6 6
P. H. Allin & Sons	16,134 0 0
Rosser and Russell, Ltd.	15,900 0 0
J. & F. May	15,700 0 0
Wenham & Waters, Ltd.	15,480 0 0
Lea & Warren	14,905 0 0
Wm. Freer	13,750 0 0
Brightside Foundry and Engineering Co., Ltd.	12,756 0 0
Joseph Richmond & Co., Ltd., 30, Kirby-street, Hatton-garden, E.C.*	12,340 0 0

[Engineer's estimate, £16,000.]

COGGESHALL (Essex).—For new road, for the Rural District Council. Mr. E. H. Bright, Surveyor, Dodds Hall, Braintree:—

For Carting Materials:—Fred Matravers, Church-street, Coggeshall.* Brick rubbish and gravel, 1s. 4d. per yard, and granite 1s. 4d. per ton.

For Team Labour:—Arthur Hutley, Church-street, Coggeshall.* Hire of two-wheeled carts with one horse and man, 7s. 6d. per day; hire of two-wheeled carts with two horses and man, 13s. per day; horse and chain-harness and man, 7s. 6d. per day.

Brick Rubble:—Last & Butcher, Heybridge,* 5s. 2d. per yard.

Gravel Flints:—W. H. Collier, Marks Tey,* 5s. per yard; Last & Butcher, Heybridge,* 7s. 1d. per yard (half each, 400 yards, about).

Granite:—Jas. Runnals & Son, Penzance, Cornwall,* 12s. per ton (subject to the approval of the Chief County Surveyor).

DRIFFIELD.—For additions to workhouse infirmary, for the Guardians. Mr. Joseph Shepherdson, architect, Driffield. Quantities by Mr. John Watson, Hull:—

	£ s. d.
John Sawden	£2,865 12 0
Arthur Leason	2,850 0 0
T. S. Ullathorne	2,797 9 6
J. R. Stork	2,744 18 11
A. A. Booth	2,704 17 0
Sawden Bros.	2,700 0 0
Smallwood & Shaw	2,677 5 10
W. Leason & Son	2,675 0 0
F. Thornton	2,668 13 6
Sawden & Son	2,610 0 0
M. Gage	2,581 0 0
C. W. Dry	2,575 0 0
H. Naylor, Driffield*	2,570 0 0

GOLCAR (Yorks).—For the erection of three dwelling-houses in Station-road. Mr. A. Shaw, architect, Golcar:—

		£ s. d.
Masons: Walker Bros., Contractors, Golcar		£327 0 0
Plasterers and Painters: Dan Shaw, Golcar Hill, Golcar		54 0 0
Plumbers: France, Bamforsh, & Shaw, Plumbers, Slaithwaite		44 0 0
Slaters: T. B. Tunnacliffe, West Parade, Huddersfield		40 10 0
GRIMSBY.—For the construction of gangway and additional bookcases at the Public Free Library, for the County Borough of Grimsby. Mr. H. Gilbert Whyatt, A.M.I.C.E., Borough Engineer and Surveyor:—		
Waterman	£175 6 0	
White	139 12 8	
Smith	138 18 3	
North of England Furnishing Company	133 0 0	
Thomas	£117 19 8½	
Rands and Lindup	100 15 0	
Dixon, Grimsby*	97 15 0	

HOLLINSEND.—For sewering work, for the Handsworth Urban District Council. Mr. Bernard Powell, surveyor and engineer, Handsworth:—

	The Croft.	Albert-road.	Total.
Thomas Whitehead	£213 8 0	£215 5 0	£428 13 0
Dawson & Jonas	173 15 0	192 15 0	366 10 0
Geo. Hall & Co.	104 4 9	125 7 4	229 12 1
Pinder Bros.	92 15 0	106 6 0	199 1 0
Green & Co.	79 5 9	98 3 6	177 9 3
G. W. Young	111 7 0	97 7 9	208 14 9
James Holmes	78 16 6	95 8 0	174 4 6
Kirkley & Drabble, Mostro*	—	—	172 0 0
Engineer's estimate	82 0 0	99 10 0	181 10 0

HORSELL.—For alterations to residence, "Brock Hill," Horsell, Surrey, for Mr. H. P. Lawson. Mr. H. G. Gribble, architect, St. John's, Surrey:—

C. Colborne	£655	W. R. Roake	£505
Drowley & Co.*	518	H. W. Hutton	453

ISLEWORTH.—For Guernsey granite spall at Workhouse, for the Brentford Union Guardians:—

J. Mowlem & Co., Grosvenor Wharf, Westminster, S.W., 200 tons of hard Guernsey granite spalls at 11s. 4d. per ton.

LANCHESTER (co. Durham).—For new R.C. presbytery. Mr. H. T. Gradon, architect, Durham:—

Gradon & Son	£1,550 0 0	Rutter & Sons	£1,355 0 0
Draper & Sons	1,507 12 2	Jas. Robson,	
Thos. Hilton	1,369 7 7	Waterhouses	1,339 0 0

LANCHESTER (co. Durham).—For new R.C. schools. Mr. H. T. Gradon, architect, Durham:—

Draper & Sons	£1,926 2 7	Rutter & Sons	£1,608 0 0
Gradon & Son	1,800 0 0	Jas. Robson,	
Thos. Hilton	1,658 17 7	Waterhouses	1,510 0 0

LEYTON.—For constructing the Fillebrook Valley sewer in Sidmouth-road and between Southwest-road and Wallwood-road, for the Urban District Council. Mr. W. Dawson, M.Inst.C.E., Town Hall, Leyton:—

	Scheme A. Brick Culvert.	Scheme B. Concrete Tube.
R. Ballard	£4,975 0 0	£4,297 0 0
Rowell & Sons	4,835 19 6	4,646 17 0
F. J. Coxhead	3,678 0 0	3,003 0 0
T. Adams	4,670 15 6	3,927 19 6
John Jackson	3,729 13 6	3,419 14 2
G. Bell	4,968 10 6	4,637 10 6
G. J. Anderson	3,404 14 1	3,029 5 11
W. Manders, Leyton*	3,331 12 8	2,957 2 8
Surveyor	3,560 0 0	3,080 0 0

LONDON.—For the supply of four 3,000 kilowatt three-phase generators at the Greenwich electricity generating station, for the London County Council:—

	£ s. d.
Richardson, Westgarth, & Co., Ltd.	£39,342 10 0
Dick, Kerr, & Co.	36,000 0 0
The British Westinghouse Electric and Manufacturing Company, Ltd.	34,385 0 0
The Brush Electrical Engineering Company, Ltd	32,872 0 0
Bruce, Peebles, & Co., Ltd.	30,558 0 0
The Electric Construction Company, Ltd., London and Wolverhampton*	29,600 0 0
Witting, Eborall, & Co., Ltd.	29,360 0 0
The General Electric Company (1900), Ltd.§	24,379 0 0
The International Electrical Engineering Company, Ltd.§	23,435 0 0
The Siemens Schuckert Works‖	23,405 12 0
Siemens Bros. & Co., Ltd.‖	23,385 0 0

§ Requires auxiliary heavy fly-wheel.
‖ Not to specification.

[The Electric Construction Company, Ltd., are allowed to sublet to Messrs. P. R. Jackson & Co., or to Mr. R. G. Ross, or to such other firm as may be approved by the engineer under the contract, the manufacture of the gear for the barring motors required for use in connexion with the generators referred to.]

LONDON.—For road-making works at Park Hospital, Hither Green, Lewisham, S.E., for Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer and Surveyor to the Board:—

B. Martin	£1,560 14 0	J. C. Trueman	£636 0 0
Wm. Pearce	890 0 0	Thos. Adams	627 0 0
R. E. Mayo	850 0 0	E. B. Yewen	599 0 0
J. Summerfield	800 13 11	A. T. Catley	594 0 0
F. Fowles	728 0 0	Fry Bros.	570 0 0
J. Mowlem & Co., Ltd.	695 0 0	H. Woodham & Sons, Sangley-road, Catford, S.E.*	490 0 0
R. Ballard, Ltd.	687 0 0		

[Engineer's estimate, £530 7s. 6d.]

LONDON.—For the erection of a mortuary, post-mortem room, etc., Lamb-lane, for the Greenwich Borough Council. Mr. Alfred Roberts, architect, 18, Nelson-street, Greenwich:—

B. Sargent & Co.	£2,999 0 0	B. E. Nightingale	2,141 0 0
J. F. Holliday	2,558 0 0	T. G. Sharpington	2,128 0 0
F. T. Thorne	2,300 0 0	H. Groves	2,116 0 0
Enness Bros.	2,270 0 0	W. Martin	2,102 0 0
S. J. Jerrard & Sons	2,249 0 0	H. Kent	2,100 0 0
C. R. Price	2,244 0 0	F. J. Gorham	2,091 5 10
Lole & Lightfoot	2,241 0 0	Thomas & Edge	2,079 0 0
Holliday & Greenwood	2,237 0 0	J. Ferguson & Co.	2,070 0 0
J. O. Richardson	2,198 0 0	W. Mills, St. George's-rd. Blackheath†	2,068 0 0
C. Ansell	2,195 0 0		
Foster Bros.	2,166 0 0		
J. Parsons	2,146 0 0		
H. Somerford & Son	2,145 0 0		

(*Continued on page* 123).

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

COMPETITIONS.

Nature of Work.	By whom Required.	Premiums.	Designs to be delivered
*Isolation Hospital	Hitchin Joint Hospital Board	See Advt. in this issue	Feb. 1
Enlarging of Chancel, Holy Trin. Ch., St'kt'n-on-Tees	Particulars, Holy Trinity Vicarage	No premium	Mar. 1
*Designs for Branch Public Libraries	County Borough of St. Helens	20*l.* and 10*l.*	Mar. 31
*Designs for New School	Govs. of N'c'tle-on-Tyne R.G.S.	100*l.*, 50*l.*, 25*l.*	April 30
*Design for Reconstrution of Meat Market	Haverfordwest Town Council	20 Guineas	No Date

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, &c., supplied by	Tenders to be delivered
Bridge, etc., Pelyn Lake, Lanlivery, nr. Lostwithiel	Cornwall County Council	S. W. Jenkin, M.Inst.C.E., County Surveyor, Liskeard	Jan. 30
Bridge at Clerkenwater, near Bodmin	do.	do.	do.
Relieving Arch, etc., at Yeolmbridge	do.	do.	do.
Bridge, etc., Lavedden, near Bodmin	do.	do.	do.
Alterations to Board Room, etc., Northumberland-sq.	Tynemouth Guardians	H. Gibson, Architect, Wellington Chambers, North Shields	do.
Tool Shed, Mansbridge, North Stoneham	South Stoneham R.D.C.	W. F. Watts, Building Surveyor, Bitterne	Feb. 1
Causewaying, etc., Anderson-street, etc.	Town Council, Port Glasgow	A. Paton, Town Clerk, Port Glasgow	do.
Spec'l Sch., C'kery, etc., Paget-st. & Carter-rd., Newhall	Sheffield Education Committee	Holmes & Watson, Architects, 38, Church-street, Sheffield	do.
Heating Apparatus, Hammerton-street School	do.	W. J. Hale, 13, St. James's-row, Sheffield	do.
Furniture for Isolation Hospital, Hampton Hill	Hampton U.D.C.	Surveyor, Public Offices, Hampton	do.
Materials, Longford Depot	Warrington Corporation	Manager, Longford Depot	do.
Alterations, etc., 41, Upper Sackville-street, Dublin	National Institution for the Blind	Carroll & Batchelor, Architects, 86, Merrion-sq. South, Dublin	do.
Board School, Long Lee, Keighley	Keighley School Board	A. P. Harrison, Architect, 18, Cooke-lane, Keighley	do.
School, New Tredegar	Bedwellty School Board	James & Morgan, Architects, Charles-street Chambers, Cardiff	do.
Alterations and Additions, Upper Rhymney School	do.	do.	do.
38,000 sup. ft. Pa. Glazing, Electric Car Wks., Hyde-rd.	Tramsways Com. Manchester Corp	J. M. M'Elroy, Tramways Department, 55, Piccadily	do.
Seven Motor Cars, to run on Tramways	Kirkcaldy Corporation	O. F. Francis, Burgh Electrical Engineer, Victoria-road, Kirkcaldy	do.
Street Works (Herbert-street and Arthur-street)	Prestwich U.D.C.	Surveyor, Chester Bank, Prestwich	do.
Alterations, etc., to the Old Theatre, Buxton	Buxton Gardens, etc., Co., Ltd.	W. R. Bryden, Architect, 1, George-street, Buxton	do.
Three W.T. Boilers, etc., Bengw'th-rd., Loughboro Ju.	S. London Electric Supply Corp.	Kincaid, Waller, Manville, & Dawson, Engs., 29, Gt. George-st., S.W.	do.
Alterations, etc., House & Farm bldgs., Nocton Heath	J. Hodgson	W. Watkins & Son, Architects, Silver-street, Lincoln	do.
Alterations to Farmhouse, Nocton	.....	do.	do.
Sewers and Sewage Works, Menstrie	Clackmannanshire County Council	W. R. Copland, C.E., 146, West Regent-street, Glasgow	do.
Alterations, etc., Workhouse Chapel	Bishop's Stortford Guardians	The Workhouse, Bishop's Stortford	do.
*Free Library, Victoria-avenue	Borough of Harrogate	H. T. Hare, F.R.I.B.A., 13, Hart-st., Bloomsbury-square, W.C.	do.
Materials, Night Soil Department	Warrington Corporation	Cleansing Superintendent, Central Sanitary Depot, Howley	Feb. 2
500 Galvanised Steel Sanitary Pails	do.	Cleansing Department, Central Sanitary Depot, Howley, Warrington	do.
500 Galvanised Steel Ash Bins	do	do.	do.
Street Works, Walter-street, Abercynon	Mountain Ash U.D.C.	W. G. Thomas, Surveyor, Town Hall, Mountain Ash	do.
Stoneware Pipes, etc.	Leyton U.D.C.	W. Dawson, Surveyor to Council, Town Hall, Leyton	do.
1,300 yards of Pipe Sewers, Dinnington Colliery	Senton Burn Coal Company	H. W. Taylor, A.M.I.C.E., St. Nicholas Cham'rs, Newcastle-on-Tyne	do.
Electric Light and Painting, Liberal Club, Woodhouse	.....	T. A. Buttery & S. B. Birds, Architects, 1, Basinghall-sq., Leeds	do.
Business Premises, Clough Bridge	H. Taylor	Brodrick, Lowther, & Walker, Central Chambers, Bridlington	do.
Rebldg. Weigh Office, etc., Sunbridge-rd. Destr'tor Wks	Bradford Corporation	F. E. P. Edwards, City Arch., Whitaker Bldgs, Brewery-st. Bradford	Feb. 3
*Warehouse in Lant-street, Borough	.....	George A. Lansdowne, Arch., 9, Regent-st., Waterloo-place, S.W.	do.
Heating at Nurses' Home, Union Hospital	Ashton-under-Lyne Guardians	J. Eaton, Sons, & Cantrell, Arch., Stamford-st., Ashton-under-Lyne	do.
Boundary Wall, etc., Along George Mellor-road	do.	do.	do.
Spring Steel	East India Railway Company	C. W. Young, Secretary, Nicholas-Lane, London, E.C.	do.
Galvanised Steel Strand Wire for Fencing	do.	do.	do.
Tiling One Side of Swimming Bath, Lavington-street	Southwark Borough Council	Borough Engineer, Southwark Town Hall, Walworth-road, S.E.	do.
Materials	do.	Town Hall, Walworth-road, S.E.	do.
Extens'n. of Elec. Light Installation, Marshall-st Baths	Westminster City Council	J. Hunt, Town Clerk, City Hall, Charing Cross-road, W.C.	do.
*Supply of Road Materials	H.M. Office of Works	H.M. Office of Works, Storey's Gate, S.W.	do.
Materials	Hollingbourn R.D.C.	H. J. Bracher, Clerk, 33, Earl-street, Maidstone	do.
Paving Works	Greenwich Borough Council	Borough Engineer's Office, Town Hall, Greenwich	do.
Painting Exterior of Pier Pavilion	Southend-on-Sea Corporation	E. J. Elford, Borough Engineer, Southend	do.
Russian Bath, etc., Dairy Public Baths	Edinburgh Corporation	R. Morham, City Arch., Public W'ks Office, City Chambers, Edin.	do.
Steel and Iron Work, Skerrie's Lighthouse	.....	E. P. Edwards, Secretary, Trinity House, E.C.	Feb. 4
Hard-wood Blocks, High-street, etc.	Southend-on-Sea Corporation	E. J. Elford, Borough Engineer, Southend	do.
Scavenging	Blaydon U.D.C.	R. Biggins, Sanitary Inspector, Council Offices, Blaydon-on-Tees	do.
227 yds. 18 in. Stoneware Pipe Sewer, Garden-st., etc.	Ramsbottom R.D.C.	J. Diggle, C.E., Hind Hill-street, Heywood	do.
Rebuilding Boundary Wall, Fortune Green	Hampstead Borough Council	Borough Engineer, Town Hall, Haverstock Hill, N.W.	do.
Auction Mart, Blairgowrie	M'Kinnon & Doeg	W. J. Brewster Grant, Architect, Bengarth, Blairgowrie	do.
Eight Houses, Clayton-road, Lidget Green	.....	W. Rycroft, Architect, Bank Buildings, Manchester-rd., Bradford	do.
School, Camelsdale, near Haslemere	West Sussex Education Committee	J. H. Howard, Architect, Lower-street, Haslemere	do.
Six Houses, Allergate Estate, Durham	Durham Co-operative Society	G. Ord, Architect, 16, The Avenue, Durham	do.
Building and Drainage, Workhouse Infirmary, Ore	Hastings Guardians	A. W. Jeffery & Son, 5, Havelock-road, Hastings	do.
Alterations and Additions to Workhouse	Barnstaple Guardians	W. C. Oliver, Architect, Barnstaple	do.
Concrete Landing Stage, Firestone Bay	East Stonehouse U.D.C.	F. A. Wiblin, Surveyor's Office, Town Hall, East Stonehouse	do.
Four Dwelling-houses, Burbeary-road, Lockwood	.....	J. B. Abbey & Son, New-street, Huddersfield	do.
Two c.i. Filters	Newburgh Town Council	W. D. Sang & Lockhart, C.E., Kirkcaldy	do.
2,500 yards c.i. Pipes	do.	do.	do.
Paving, etc., Ormskirk	West Lancashire R.D.C.	C. Law-Green, Surveyor, Wigan-road, Ormskirk	do.
Materials, Ormskirk	do.	do.	do.
*Excavation and Concrete Wk. at New Baptist Chapel	.....	William Stevens, 21, New Bridge-street, E.C.	do.
Sub-soil Drains, at Cemetery, Hollybrook	Southampton Corporation	Borough Engineer, Market Chambers, Southampton	Feb. 5
Residence, Nields-road, Slaithwaite, Yorks	.....	Lunn & Kaye, Architects, Milnsbridge	do.
Bridge over River Boyne at Trim	Meath County Council	H. J. Cullen, County Offices, Navan	Feb. 6
Pipe Sewers, Sileby	Barrow-on-Soar R.D.C.	W. H. Simpson, Engineer, Corridor Chambers, Market-place, Leics.	do.
Retaining, etc., wall, etc., Merrymeeting Cemetery	Rathdrum & Wicklow Jt. Burial Bd.	J. Pansing, A.M.Inst.C.E., Town Hall, Wicklow	do.
Two Mortuary Chapels and House	do.	do.	do.
Additions, etc., to Workhouse, Lanchester	Guardians	Newcombe & Newcombe, Arch., 89, Pilgrim-st., Newc'stle-on-Tyne	do.
Carts and Sweeping Machine	Littlehampton U.D.C.	H. Howard, Surveyor, Town Offices, Littlehampton	do.
Elec. Light in Five Bldgs. of Hospital, Fall Birch-lane	Horwich, etc., Hospital Com.	Cressey & Keighley, Architects, Euston-road, Morecambe	do.
Stores and Articles	Dublin Corporation	Spencer Hartz, Borough Surveyor, Dublin	do.
Sinking Two Shafts, Carnock Colliery	.....	The Alloa Coal Co., Ltd., Alloa, N.B.	do.
*Additional Drying Room, etc., at Co. Asylum Knowle	County of Southampton	County Surveyor, The Castle, Winchester	do.
Materials	Hinckley U.D.C.	E. H. Crump, Surveyor, Council Offices, Hinckley	Feb. 8
Two Bridges (Lambeck and Gill)	Penrith R.D.C.	J. W. Smith, Clerk to Council, Penrith	do.
500 yds. of Dry Wall at Lambeck	do.	do.	do.
20-Ton Four Motor Crane, Power Station, Southwick	Brighton Corporation	A. Wright, Engineer, Star Chambers, 30, Moorgate-street, E.C.	do.
Four Motor-driven Pumps at Sewage Farm	Drainage Committee, Canterbury	C. A. Blaschcek, City Electrical Engineer, Canterbury	do.
1,175 Tons of c.i. Pipes	Kingswinford R.D.C.	W. Fiddian, F.S.I., Old Bank Offices, Stourbridge	do.
Manhole and Lamphole Covers	do.	do.	do.
House Drainage Work for Twelve Months	Manchester Corporation	H. Prescott, Manager of House Drainage Dept., Manchester	do.
Ventilating Grids and Castings for Twelve Months	do.	do.	do.
Shed Extension, York Dock, co. Antrim	Belfast Harbour Commissioners	G. F. L. Giles, Harbour Engineer, Belfast	do.
Extending and Rebuilding Churchyard Wall	West Runton Parish Council	J. Kemp, East Runton	do.
Work, Materials, etc.	Royal Borough of Kensington	Town Hall, Kensington	Feb. 9
Eight Railway Turntables, Ge'er. Station, Greenwich	L.C.C.	County Hall, Spring Gardens, S.W.	do.
Work, Materials, etc.	Stoke Newington Borough Council	Surveyor, Town Hall, Milton-road, Stoke Newington	do.
Stores and Materials	B'ham., Tame, and Rea D.D.B.	J. D. Watson, Engineer to Board, Tyburn, near Birmingham	do.
Carting Road Materials	Branston R.D.C.	J. W. Sewards, Surveyor, Auborn	do.
Granite	Lutterworth R.D.C.	J. B. Holroyd, District Surveyor, Lutterworth	do.
Additions to Offices, Corporation Wharf, Chapel	Southampton Corporation	Borough Engineer, Market Chambers, Southampton	do.
Alterations, etc., Hellingly Workhouse, Sussex	Hailsham Guardians	Mitchell & Ford, Architects, 7, Gildredge-road, Eastbourne	do.
Making-up Linton-road	Shoeburyness U.D.C.	H. Harris, Surveyor, Clarence Chambers, Southend	do.

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, &c., supplied by	Tenders to be delivered
Residence and Business Premises, Saintfield, co. Down	Minnes Bros.	Hobart & Heron, Architects, Dromore, co. Down	Feb. 10
Natural and Artificial Flags, Granite, &c.	Birkenhead Corporation	C. Brownridge, Borough Engineer, Town Hall, Birkenhead	do.
Stores and Materials	do.	do.	do.
Stores	Sewering Committee, Bury	A. W. Bradley, A.M.I.C.E., Borough Engineer, Bury, Lancs.	do.
Alterat'n., etc., Christian-st. Stores, Harrington, Cumb.	Co-operative Society	C. W. Eaglesfield, Architect, Gordon-street, Workington	do.
*Acetylene Gas Fittings, Cobham Hosp., nr. Gravesend	Strood R.D.C.	E. Godfrey Page, 485, Warwick-court, Gray's Inn, W.C.	do.
*Cleaning and Watering Roads, etc., in Regent's Park	Crown Estate Paving Commission	The Lodge, Park-square West, Regent's Park	do.
*Additional Contracts	Battersea Borough Council	Town Hall, Lavender-hill, S.W.	do.
*Erecting Cottage at Shooter's Hill and Tooting-grove	M. A. B.	Office of the Board, Embankment, E.C.	do.
Extension of Generating Station, Port Dundas	Glasgow Corporation	W. A. Chamen, Engineer, 75, Waterloo-street, Glasgow	Feb. 11
4,000 Tons of Slag	Worksop U.D.C.	G. H. Featherston, Clerk, Town Hall, Worksop	do.
Church, Tennent-street, Belfast	Shankhill-rd. Baptist Church Com.	J. A. Hanna, Architect, 102, Donegall-street, Belfast	do.
*Supplies, etc.	West Ham Council	Borough Engineer, Town Hall, Stratford, E.	do.
Stores	Belfast & County Down Ry.	Secretary's Office, Queen's Quay Terminus, Belfast	Feb. 12
300 Yds. of Unclimbable Fencing, Potternewton Pk.	Leeds Corporation	City Engineer's Office, Leeds	do.
*Additional Houses, etc., at Netley Coastguard Station	Admiralty	Superintending Engineer, H.M. Dockyard, Portsmouth	do.
*New Coastguard Station, etc., St. Leonards	do.	Director of Works Dept., 21, Northumberland-avenue, W.C.	do.
Materials for the Water Committee	.....	Water Engineer, Municipal Offices, Sankey-street, Warrington	Feb. 13
*Ext'n. of Sea Defence Wks., Blue Anchor, nr. Watchet	Somerset County Council	County Surveyor's Office, Belmont, Bath	Feb. 15
Underground Conveniences, Promenade, Whitley Bay	Whitley & Monkseaton U.D.C.	J. P. Spencer, Architect, 30, Howard-street, North Shields	do.
Cast Iron Tank, etc., Longford Depot	Sanitary Works Com., Warrington	Manager, Longford Depot, Warrington	do.
Small Reservoir, Longford Depot	do.	do.	do.
Stores for One Year, for Paving Committee	do.	Borough Surveyor, Town Hall, Warrington	do.
Stores	River Weaver Navigation Trustees	J. A. Saner, Engineer, Weaver Navigation, Northwich	do.
Sewerage, etc., Works, Selston, Notts	Basford U.D.C.	Sands & Walker, & S. Maylan, Engineers, Milton-st., Nottingham	do.
Two Hydraulic Goods Lifts, Cold Air Stores, Smithfield	Manchester Markets Committee	City Surveyor's Office, Town Hall, Manchester	do.
*Furniture at Shipman-road Schools	Borough of West Ham	William Jacques, A.R.I.B.A., 2, Fen-court, Fenchurch-street, E.C.	do.
*Roadmaking and Sewers, at White Hart Lane	London County Council	Hous. of Working Class Sec., Arch. Dept., 19, Charing-cr.-rd., W.C.	Feb. 16
Sewers and Sewage Purification Works	Wellington (Somerset) U.D.C.	C. J. Lomax, A.M.Inst.C.E., 37, Cross-st., Manchester	do.
200,000 Railway Sleepers	G.N. Railway	Engineer to the Company, King's Cross Station, London	do.
Fire Hydrants, etc., Waterworks	Plymouth Corporation	F. Howarth, Water Engineer, Municipal Offices, Plymouth	do.
Fire Station and Police Station, London-road, etc.	Watch Com., Manchester Corp.	City Treasurer, Town Hall, Manchester	Feb. 17
Wooden Shelter, Hunslet Lake Side, Leeds	Leeds Corporation	City Engineer's Office, Leeds	do.
Annual Contracts	Folkestone Corporation	A. E. Nichols, Borough Engineer, Corpn. Offices, Folkestone	do.
*Superstructure of proposed Fire Station, etc.	Manchester Corporation	William Windsor, Quantity Surveyor, 37, Brown-st., Manchester	do.
Natural Mineral Rock Asphalt Work, Dock 9, Salford	Manch'ter Dk. & Warch'e Ex. Co.	W. H. Hunter, Ship Canal Co., 41, Spring Gardens, Manchester	Feb. 1
Sinking a Well, Gransha	Derry Dis. Lun. Asy. Committee	M. A. Robinson, C.E., Richmond-street, Londonderry	Feb. 1
Materials for One Year	Plymouth Corporation	J. Paton, Borough Engineer, Municipal Offices, Plymouth	Feb. 20
Two c.i. Pressure Filters, Newburgh Water Supply	Newburgh Town Council	W. D. Sang & Lockhart, C.E., Kirkcaldy	do.
2,500 lin. yds. c.i. Pipes, etc., Newburgh Water Sup.	do.	do.	do.
Comp. Vertical Inverted Eng. and Borehole Pump	Chelmsford Corporation	P. Griffith, Engineer, 54, Parliament-street, Westminster, S.W.	do.
*Infectious Diseases Hospital	Reading Borough Council	C. Smith & Son, Architects, 164, Friar-street, Reading	do.
*Annual Contracts	Borough of Hornsey	Boro' Engineer, Municipal Offices, Southwood-lane, Highgate, N.	Feb. 22
Engine and Dynamo	Edinburgh Corporation	Resident Electrical Engineer, Dewar-place Station, Edinburgh	do.
Fifty-eight Houses, Ely-street, Tonypandy	Tonypandy Building Club	Lewis & Morgan, Architects, 55, Dunraven-street, Tonypandy	do.
Victoria Station, Manchester, Extension (Contract 4)	Lancashire & Yorkshire Rail'y. Co.	Engineer's Office, Hunt's Bank, Manchester	Feb. 23
*Erection of Tramway Car Sheds, etc.	Walthamstow U.D.C.	Council's Engineer, Town Hall, Walthamstow	do.
Conduits and Mains	Islington Borough Council	Borough Engineer, 50, Eden-grove, Holloway, N.	Feb. 24
*Two Additional Wards at Rainhill Annexe	Lancashire Asylums Board	Clerk and Steward, County Asylum, Rainhill	Feb. 25
Erec. of Cen. Boiler House, etc., Hanwell Lun. Asy.	L.C.C. Asylum Committee	Clerk of the Asylums Com., Asy. Com. Office, 6, Waterloo-pl., S.W.	Feb 27
*Additional Buildings at South-grove Workhouse	Whitechapel Guardians	Guardians Offices, Vallance-road, Whitechapel	Feb. 29
Twenty-five Electric Hoists for Transit Sheds, Dock 9	Directors Manchester Ship Canal	W. H. Hunter, M.Inst.C.E., 41, Spring-gardens, Manchester	Mar. 1
Ten Electric Fixed Cranes for Transit Sheds, Dock 9	do.	do.	do.
12,000 Tons 2 in. Blue Guernsey Granite, etc.	Middlesex County Council	County Engineer and Surveyor, Middlesex Guildhall	do.
Cartage of Materials	do.	do.	do.
*Municipal Offices and other Buildings	Tottenham U.D.C.	Council's Engineer, 712, High-road, Tottenham	do.
Light Railways	Middlesex County Council	County Engineer, Middlesex Guildhall, Westminster	Mar. 14
Sea Embankment and Wet Dock	Swansea Harbour Trustees	A. O. Schenk, M.Inst.C.E., Harbour Offices, Swansea	No date
Reading & Smoking Room, Vulcan Ironworks, Derby	Ley's Malleable Castings Co.	E. R. Ridgway, Architect, Long Eaton	do.
Water Tower, Vulcan Ironworks, Derby	do.	do.	do.
Cutting Eleven Bog Keshes	Magherafelt R.D.C.	W. Hastings, Clerk, R.D.C. Office, Magherafelt, Ireland	do.
Church of St. John, Portobello, Edinburgh	.....	J. T. Walford, Architect, Joppa	do.
Wooden Rails Round Track, Blackhall Racecourse	Carlisle Race Stand Company	J. P. Stubbs, Secretary, 15, Howard-place, Carlisle	do.
100 Tons of Fine Crushed Slag	Tynemouth Corp.	J. F. Smillie, Borough Surveyor, Tynemouth	do.
Six Houses, Whitewell Bottom, Lancs.	.....	R. Whittaker & Son, School-street, Whitewell Bottom	do.
Weaving Shed, etc., Eldon-street, Preston, Lancs.	Eldon-street Mill Company	P. Pickup, Architect, Mercantile Chambers, Burnley	do.
Cottage, Whitewell Bottom, Lancs.	.....	C. Guy, Rosedale, Whitewell Bottom	do.
Alterations to Town Hall	Folkestone Corporation	R. Pope, F.R.I.B.A., 17, Cheriton-place, Folkestone	do.
*Plumbing Work to Artisans' Dwellings, Bethnal Green	.....	Clerk of Works on Job, Barnsley-street, Bethnal Green	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in
Land Surveyors	Congested Dis. Board for Ireland	.....	Jan. 30
Electrical Superintendent	Tyne Improvement Commission	150*l.*	do.
General Foreman	Shrewsbury Improvement Com.	2*l.*	Feb. 1
Temporary Engineering Assistant	Coventry Corporation	3*l.* 3s. per week	do.
Assistant Electrical and Mechanical Station Engr.	Tramway Committee, Leicester	160*l.*	Feb. 2
*Clerk of Works	Heston and Isleworth U.D.C.	4*l.* 4s. per week	do.
Sanitary Inspector	Southwark Borough Council	120*l.*	Feb. 4
Buildings and Road Surveyor	Blean R.D.C., 39, Castle-st. Cant'b'y	200*l.*	Feb. 11
*Outdoor Labour Superintendent	Bromley Borough Council	2*l.* 10s. per week	Feb. 17
Engineering Assistant	Wolverhampton Corp.	100*l.*	Feb. 27
*Foreman of Works	Sierra Leone Government Rys.	300*l.* per annum	No date
*Foreman	Admiralty	Not stated	do.

Those marked with an asterisk (*) are advertised in this Number. *Competitions*, iv. *Contracts*, iv. vi. viii. x. *Public Appointments*, x.

TENDERS.—*(Continued from page 121).*

LONDON.—For additional surface water drainage at the Tooting Bec Asylum, for the Metropolitan Asylums Board:—

W. Johnson & Co., Ltd.	£398	D. R. Paterson	498
Cropley Bros., Ltd.	679	E. B. Yewen	479
T. Adams	541	R. E. Mayo	425
C. R. Price	527	J. W. Dean, Ltd.	420
A. C. Soan	500	W. Hall	380
		Gander & Hazell*	359

[Architect's estimate, £490.]

LONDON.—For additions to steam and house coal stores at South-Western Hospital, Landor-road, Stockwell, for Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer and Surveyor to the Board:—

A. Leather	£383	Enness Bros.	£264
West & Richards	325	Gardner & Hazell	239
W. & C. Brown	325	W. J. Coleman & Co.	230
Higgs & Hill, Ltd.	313	Thomas Cole, 125-7, Offord-road, Barnsbury, N.*	224
C. R. Price	311		
Thos. Pearce	299		
H. Bragg & Sons	275		

[Engineer's estimate, £275.]

NOTTINGHAM.—For alterations and additions to office, Park-row. Messrs. A. R. Calvert & William R. Gleave, architects, 18, Low-pavement, Nottingham:—

James Wright* £575 0 0

[Lowest of eight tenders.]

NOTTINGHAM.—For house, Thorncliff-road. Messrs. A. R. Calvert & William R. Gleave, architects, 18, Low-pavement, Nottingham:—

T. Cuthbert* £1,050 0 0

[Lowest of eleven tenders.]

SCOTFORTH.—For the erection of a house at Scotforth, Lancaster, for Mr. J. T. Airey. Mr. J. Parkinson, architect, 67, Church-street, Lancaster:—

Masonry and Joinery: Robert Thompson, Lancaster*	£390	0	0
Slating and Plastering: R. Hall & Son, Lancaster*	61	0	0
Plumbing: H. P. Calvert, Lancaster*	54	18	0
Painting: E. C. Parr, Lancaster*	14	5	8

SUTTON-ON-SEA. — For bungalow, Sandylands Estate. Messrs. A. R. Calvert & William R. Gleave, architects, 18, Low-pavement, Nottingham:—

Thompson & Son, Louth* £1,050 0 0

[Lowest of eight tenders.]

SOUTHBOROUGH.—For about two hundred yards of deep drainage in the new cemetery, for the Urban District Council. Mr. W. Harmer, surveyor, 137, London-road, Southborough. Quantities by surveyor:—

Martin & Co.	£414	18	0
J. Summerfield	370	17	6
Thomas Potter	312	9	9
Arnold & Sons	304	18	9
A. Dixon & Co.	300	0	0
T. Hallett & Sons	296	16	4
J. Crates & Son	290	0	0
R. O. Jarvis	232	16	9
Punnett & Sons, Tonbridge	215	0	0

STOCKPORT.—For street works (Brook-street Samuel-grove, Clarke-street, Cross-street, etc.), for the Corporation. Mr. J. Atkinson, Borough Surveyor, Stockport. Quantities by Borough Surveyor:—

W. Snape	£5,442	9	6
W. H. Worthington	5,256	4	4
W. H. Eva	5,058	2	3
Gosling & Stafford	5,024	14	5
P. D. Hayes, Stockport*	4,742	9	8

WALTHAMSTOW.—For tramway works, for the Walthamstow Urban District Council. Mr. G. W. Holmes, engineer for permanent way, section A. Messrs. J. & S. Enright, engineers for sections B, C, and D.:—

	A Permanent Way.	B Electric Plant, &c.	C Cables.	D Overhead Equipment.
	£	£	£	£
W. Griffiths & Co.	59,914	—	7,221	9,740
J. A. Ewart	58,627	—	—	—
Henley's	*57,700	21,500	*7,343	*10,883
G. Law	81,058	—	—	—
R. W. Blakwell & Co...	64,042	—	—	9,522
W. Manders	59,629	—	—	9,522
Acme Wood Flooring Co.	63,993	—	—	—
A. Fasey & Son	67,994	—	—	—
Bruce, Peebles & Co. ..	—	20,861	—	—
Lancashire Dynamo & Motor Co., Ltd.	—	22,685	—	—
Johnson & Phillips	—	21,700	6,825	—
F. Suter & Co.	—	*20,685	7,255	9,048
Mather & Platt.....	—	21,919	—	—
Electric Construction Co.	—	21,921	—	—
W T. Glover & Co.....	—	—	8,101	—
Siemens Bros. & Co. ..	—	—	7,127	—
Western Electric Co. ..	—	—	7,143	—
St. Helen's Cable Co ..	—	—	7,676	—
G. Hill & Co.	—	—	—	10,793
Brush Electrical Engineering Co.	—	—	—	9,610
British Thom.-Houston Co.	—	—	—	9,231
Callender's Cable Co. ..	59,567	—	7,039	11,189
J. G. White & Co., Ltd.	59,739	—	7,339	9,446
Do.	—	21,900	—	—
National Electric Construction Co.....	—	22,221	—	13,173
Dick, Kerr & Co., Ltd.	57,700	—	7,343	10,883
Torque E. E. Co.....	—	22,000	—	—
Macartney, McElroy & Co.	55,040	—	7,659	10,245
British Insulated and Helsby Cables, Ltd...	—	—	6,947	9,945
W. Underwood.....	60,476	—	7,959	11,092
International E. E. Co.	—	20,620	—	—
Engineers' estimates ..	75,693	25,000	18,480	15,890

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WELTON.—For laying and supplying 1¼ miles of 3 in. c.i. pipes, etc., and the erection of an engine room and water tower, Bardney, for Welton Rural District Council. Messrs. Elliott and Brown, engineers, Burton-buildings, Parliament-street, Nottingham. Quantities by engineers.

F. M. Thompson & Sons.....	£2,105 0 0
W. H. Pickin	2,050 0 0
F. Miller	2,022 0 0
J. Hutchinson & Son	2,015 0 0
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Bower Bros.	1,960 0 0
Lane Bros.	1,941 7 0
Jenkins & Son	1,897 14 0
H. Ashley.....	1,850 16 4
F. Pattinson.....	1,781 9 6
Langley & Westmoreland, Kirton, Boston*.....	1,740 9 0

WEST BROMWICH.—For two iron staircases, with balconies, as additional means of exit from workhouse infirmary. Mr. J. W. Allen, architect, 298, High-street, West Bromwich:—

W. Hayward & Sons, Wolverhampton .. £246 0 0

WHITEHAVEN.—For taking down the Presbyterian Church and Manse, Market-place, and for rebuilding church. Mr. J. S. Moffat, architect, 53, Church-street, Whitehaven:—

Anderson's, Whitehaven: £3,913 19 3
:Full tender for the whole of the work.

WIMBLEDON.—For supply and erection of water softening and storage plant at Electricity Works, for the Urban District Council. Mr. H. Tomlinson-Lee, Electrical Engineer to Council, Durnsford-road, Wimbledon:—

W. Boby	£2,427 0 0
Bowes, Scott, & Western	1,975 0 0
Royles, Ltd.	1,800 0 0
Mather & Pratt	1,750 0 0
T. Waite	1,690 0 0
Badcock & Wilcox	1,526 0 0
Lassen & Hjort	1,450 0 0
Doulton & Co.	‡1,514 12 10 1,412 9 10 1,399 5 4
Potter & Co.....	1,350 0 0
Gimson & Co.	1,336 0 0
Arthur Koppel	1,200 0 0
Masson, Scott, & Co.	1,197 0 0
Paterson Engineering Co.‡.....	1,153 0 0
Kennicott Water Softener Co.	1,150 0 0
Baker's Patent Appliances Co.	958 0 0

‡ Recommended for acceptance.

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